WRITTEN HISTORY

Book 1.

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UNWRITTEN HISTORY
BOOK I.—THE AGE OF STONE

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CONTENTS

I. Unwritten History 9
II. Earth-changes in the Ancient World . . 15
III. The Work of Rivers in the Ancient World 24
IV. Types of Men in the Ancient World . . 31
V. About Flint 44
VI. The Men of the Dawn Period 52
VII. The Men of the River-Drift 58
VIII. The Men of the River-Drift 67
IX. The Men of the River-Drift 73
X. The First Cave-men 82
XI. The Later Cave-men 90
XII. The Life of the Cave-men 100
XIII. The Art of the Cave-men 107
XIV. Relics of the Cave-men 118
XV. The End of the Old-Stone Age . . . 125
XVI. The New-Stone Age 134
XVII. Life in the New-Stone Age: Homes . . 144
XVIII. Life in the New-Stone Age: Food . . . 152
XIX. Life in the New-Stone Age: Crafts . . 160
XX. Life in the New-Stone Age: Barter . . 170
Index 181

LIST OF COLOURED PLATES

River-Drift Men . . . . . *Facing page* 49

Approaching the Pitfall . . . . . ,, ,, 64

The Cave-Men's Meal. . . . . ,, ,, 96

Cave Paintings . . . . . ,, ,, 113

Magdalenian Hunters . . . . . ,, ,, 128

Hunters of the New-Stone Period . . . ,, ,, 145

Herdsmen of the New-Stone Period . . ,, ,, 160

A Potter of the New-Stone Period . . . ,, ,, 177

PREFACE

THE story of Stone-Age man in western Europe has been told many times for various purposes. Here the attempt is made to tell it again in simple outline, the object being not so much to present a collection of facts as to offer a series of pictures, illustrating, within the limits of what it is hoped may be regarded as reasonable conjecture, some of the chief characteristics of men of the long-distant past in their progress from savagery towards civilization.

While it is essential that one's thoughts should range over a far wider area than Britain, and, indeed, that one should put out of mind all present-day geographical notions, home associations are close; and the endeavour has been made to bring into the story every suitable example that can be given as an illustration from discoveries on British sites, and to suggest possibilities of interest in the home or holiday locality. Needless to say, the events described in Chapter XIV. are entirely imaginary.

Even in a simple version like this, the teller may go astray; and it is therefore with particular gratitude that the author acknowledges the kind help of Mr. T. O. Kendrick, M.A., of the Department of British Antiquities, the British Museum, who read through the proofs and made some valuable emendations in points of archæological detail.

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UNWRITTEN HISTORY

BOOK I.—THE AGE OF STONE

CHAPTER I

UNWRITTEN HISTORY

WE are sitting indoors on a winter evening. Bright lamps and the glow of the fire make the room cosy, but outside the night is dark and cold. The wind blows hard from the north, and every now and then hailstones come rattling against the window-panes. We draw aside the curtains, and see that the road outside is white all over.

Last summer when we camped out with tents and ground-sheets we slept comfortably. But we should not like to be camping out on the down to-night. Four walls and a sound roof, a bedstead and blankets, seem the right sort of things on a night like this.

Let us think of a wide, open country, here in this land of ours, in days long ago when there were no homes. There were only very few people then, where now there are many. They lived in the open all the year round, without any tents or ground-sheets, cooking-stoves or billy-cans, or any of those things which we have to

make camp-life jolly. They wandered about in little bands, with no homes of their own, no stores of food, and only the poorest and scantiest clothing. Everything they owned they had to make for themselves; and before they could make any necessary thing, they had to find the material somehow or other. They had no shops, no buildings of any kind, and no roads. The world in which they lived was as different as you can imagine from the world of to-day.

They lived in fear of wild beasts every day and every night. Round about them in the forests and plains were savage animals—lions, tigers, bears, hyenas, and wolves; and the men of those times had only the rudest kinds of weapons with which to defend themselves and their wives and children from attack. Men were one with wild nature, and they hunted and fought with all the bravery and cunning of animals. For they had to depend for their food, and for such clothing as they wore, upon their skill as hunters of wild game.

But they had something better than mere animal courage, and that was the cleverness of human brains. That is why in our country to-day all the savage animals have long since disappeared, and the only large animals we have, or ever see outside the Zoo, are those which are bred and kept to be of service to mankind.

This house in which we live, and all the houses round about it, stand on ground which was once open country. It may be only a few years or only a few months since those houses were built, or it may be a very long time; but, all the same, they were once not there.

In this room in which we sit, under the carpet are the floor-boards, and under the floor-boards the joists,

and under the joists the dry earth, where once upon a time grass and bushes and trees used to grow. If the house is an old house, many people have lived in it at different times, year in and year out. They have gone, and others have come and gone, and now it is ours.

The story of a country is like the story of a house. All over the land, villages, towns, and cities have grown up during long centuries. The events in the lives of the people who built them make up the tale, told in many long books, which is called history.

But deep down beneath the floor and groundwork of history which has been made and written for men to read, there are the rough foundations, out of sight and forgotten, that we call Unwritten History.

Some people say they find history dull and hard to learn. That may be because the written history that we learn is taken up with a great many names and dates and other things not easy to remember.

But history need not be dull. Certainly unwritten history is not. Every one may learn something about it very easily. One might say that every one nowadays ought to learn something about it ; because people are coming more and more to see that we cannot get a proper understanding of written history and all that it means, unless we know something about unwritten history.

The study of unwritten history should be full of interest to those of us who are fond of open-air pursuits. It leads us on to a finer hobby than bird-nesting or butterfly hunting, because those who take part in it can find their hunting-ground in a great many places all over the country—even near towns. One does not need to kill anything or to put anything into

a poison-bottle ; and the sport may be carried on at all seasons of the year.

Wherever there is any digging going on ; where workmen are cutting out a deep trench for a drain or for the foundations of a house, or digging a hole for a gatepost or a telegraph post ; in gravel pits and quarries, in fields newly ploughed, or even on the open ground and rough paths over downs and moorlands—there is always a chance that some relic of prehistoric times may be found. Sometimes on the banks of rivers at low-water, and in some places on the sea-shore, very interesting and valuable relics have been picked up. These are hunting-grounds not only for professors and learned men, but also for the boy or girl who has gained a little knowledge of unwritten history.

Especially should this study appeal to Scouts and Guides. The tent pitched on the hillside ; the camp-fire and the meal cooked in the open air ; the water carried from the spring ; the sight of the stars over-head at bedtime—bring us into fellowship with the ancient hunters of our land. And such feeling for the past is quickened if we should chance to find among the loose earth thrown out from a rabbit-hole, or at the edge of a furrow, a flint knife or an arrow-head which may speak to us of a skin-clad hunter in the ages long ago, who had to lie in wait for his supper and catch it before he could eat it.

This book does not profess to tell you all about unwritten history. It would take a very big book to tell all that is known already ; and almost every month that passes, and certainly every year, something new is being found out. Probably all about unwritten

history will never be known. But a great deal is known, and some of it should be a possession of all of us; not as a lesson to be learned, but as a story to be enjoyed. Even so little as is set out in these chapters may be the beginning of an interest that will last us all our lives, and make a country trip or a visit to a museum something in which we may take a real pleasure.

In the chapters that follow you will find some hints about what to look for in museums. Almost every well-arranged museum nowadays has one or more sections where relics of prehistoric times are set out. Perhaps you have seen them, and thought them not very interesting. But make a start, and it is likely that you will find how full of interest they really are. It is a good plan to go carefully through the collection in the order in which the objects are arranged, beginning with the most ancient; and make your own drawings, in a notebook, of some that seem to you the most interesting, copying the names and details from the labels. This will help you to get your eye in, and give you a clue to the principal types, and the districts in which they have been found.

Then if you join in an outdoor ramble, especially if guided by some one who knows the country, you will have an idea of what to look for. If you should spend a holiday on the North or the South Downs, or the Chilterns, the Yorkshire wolds, or indeed in any hilly or mountainous country in England, Wales, or Scotland, not too high up for habitation and cultivation to-day, you will have capital opportunities. It may not be your luck to find any relics, bones, or flints or broken pottery that you can bring home in your

pocket; but at any rate you will have gained something from the sight of the hills where the ancient hunters dwelt and the earthworks and burial mounds which they set up—something which you can carry in your mind, and which will stick there longer than anything you can get by reading this or any other book.

CHAPTER II

EARTH-CHANGES IN THE ANCIENT WORLD

ONE day, walking across a cornfield after the crop had been carried, a boy found a stone about as big as his fist, on which was shown, like the pattern stamped on a pat of butter, the perfect shape of a cockle-shell.

A grown-up friend said to him, "That is a fossil. Once it was a real shell, not turned into stone as you see it now. It formed half the home of a shell-fish, a sort of scallop. In the days when it was alive, all this country, as far as you can see, and farther, lay at the bottom of a deep sea."

THE FOSSIL SHELL.

The boy was very much surprised to hear this. He looked away to the line of hills at the other side of the valley, and tried to fancy how it would appear if all that space were filled with tossing waves. It seemed almost too much to imagine that the whole countryside, hills and all, had once been covered by the sea.

To tell the story of the fossil shell and of the vast changes that had taken place through the long ages that passed before it came to lie, a fossil, on dry land, is more than we can think of doing here. But even if we were to attempt to take up the story of lands and

seas, beginning with the lifetime of that scallop, we should not then be anywhere near the beginning of the story of the earth.

The story of the earth had its mysterious beginning ages and ages earlier, and the world had passed through many and great changes before the days when the scallop opened its valves in the clear sea.

The life-story of the old earth, as it is read in the record of the rocks and stones, belongs to the science of geology. Those who are learned in that science can tell, if we show them a fossil, to what period in the story of the earth it belongs. They would not tell us a date, because in geology there are no dates. Dates belong to written history. Before written history there was unwritten history, when there were no means of fixing dates or measuring time by calendars or tables, as we measure it nowadays ; and before unwritten history there were the long, long ages which geologists can picture for us, but cannot measure, except in periods of enormous length which have nothing to do with our standards of time.

Geology is a wonderful science, full of interest, which would take many years of study in books and out-of-doors to learn. But we need not be geologists to understand a little of this great subject as it concerns us here.

In the story of the earth there are three great phases. First, there was the phase of which geology tells. This phase began before there was any living creature upon the globe. It continued for ages uncounted, during which in succession many species of creatures—fishes, reptiles, birds, and animals, but no men—inhabited the seas and the lands. Although the

work of the forces of nature that change the face of the earth is always going on, we think of the geological period as ended when mankind appeared.

When the first traces of man are found upon the earth a new phase opens, called the prehistoric phase. It lasted until men invented means of writing down records. This phase is therefore the period of unwritten history.

Then, when the means of making and keeping written records had been discovered, the third phase, the period of written history, began.

Any of us would find it impossible to form an idea of the tremendous length of time which these periods represent. We know that the phase of written history, from the times of the ancient Babylonians and Egyptians, through that of the Greeks and the Romans and the centuries of the Christian era, is not less than 4000 years. That is a longer time than any of us could possibly grasp. If you should live to be a hundred years old, your memory would go back a long way. But even so, it would be difficult for you, and more difficult still for people younger than you, to realize what an immense time a thousand years would represent, let alone five thousand. The period of unwritten history was very much longer than that. It was perhaps eight or ten times longer than the historic period.

As for the geological ages during which great forces were shaping the earth before the existence of mankind, no one can say how long they were. Even if the great total were known, and could be told in any terms which we could put down in figures, the figures would mean nothing to us. It is enough if we realize that for the

working out of these vast changes long, long ages were needed.

Geologists are able to look on the world with eyes very different from ours; just as a trained musician listens to a fine piece of music with an understanding beyond that of an ordinary hearer.

We think of the features of the earth as fixed, and we call the hills eternal because through many life-times they remain to all appearance unchanged. But geologists know that earth-changes are always going on, and they think back into the long ages of the past when the forms of land and sea were very different from what they are to-day. We look at the map of the world and we see the shapes of the continents with the oceans around them. We know them well enough to draw a sort of outline of them from memory.

Maps have been made, after hundreds of years of careful surveying by land and sea, to give a faithful representation of the forms of earth. Every little piece and corner of the map is the result of the work of many brains and hands. But in the far-off past of the geological ages there were no men to make measurements and surveys and construct maps. No one can say what were the features of the land masses then.

If we could be carried up to-day to an immense height above the world, and see the great globe with eyes stronger than any human eyes, we should recognize the land-shapes that we know; the downward-pointing horns of Africa and South America, the great mass of Asia, Australia like an open leaf lying in the southern ocean. But if we could have been taken up in the same way in the past geological ages, we should not

have known the former shapes of land and sea. If we could have kept our post far aloft and watched through vast periods the building-up, the decay, and the rebuilding of the forms of earth as they proceeded, we should have seen the infinitely slow and gradual making of the continents and islands that we know.

The records in the rocks which geologists interpret for us show that every part of the earth on which people live has been, not once only, but several times, covered by the ocean. Also that at different periods the form and level of the continents have been changed.

More than this, it is known that there have been great changes in climate during these long ages. The North Pole and the South Pole and the regions round about them are now covered with snow and masses of ice. But this was not always so. These regions once had a warm climate, and tropical forests grew where now all is a frozen waste. In that period other parts of the world were buried in ice and snow.

Thousands of years ago not only our own land, but the whole of the north-western parts of Europe, lay, as the Arctic regions lie to-day, in a very cold climate, and were covered with ice-fields. No creature could have lived here in that Great Ice Age.

Then, very slowly, there came a change. Little by little the climate became milder. The ice-cap gradually thawed out ; and, year by year, the huge glaciers which had covered the sides of the mountains and choked the valleys with frozen snow, melted away, leaving ice-caps only on the mountain tops.

The valleys and plains became fit for the growth of grass and trees. One mild season followed another, and by degrees vegetation sprang up and forests

grew. Then animals of many kinds found their way into these lands which had for so long been a waste of snow. In the course of time men also appeared.

HOW THE GREAT ICE-SHEET ONCE COVERED NORTHERN EUROPE AND THE REGION OF THE ALPS.

But though the Great Ice Age had passed, there were still great changes to come; changes in climate and in the form of the land itself.

Nowadays we call the climate of our land temperate, which means that though it is sometimes very cold in the winter and sometimes very hot in the summer, it is

never too cold or too hot for us to enjoy ourselves in the open air.

This temperate climate has prevailed with very little alteration during the whole historic period. But during the prehistoric period there were two more arctic, or, as they are called, glacial periods, each perhaps less terribly severe than the Great Ice Age, with long periods of mild and even warm climate in between. In fact, we have to think of a series of ups and downs of climate, coming on very gradually, and gradually passing away.

Not only were there changes of climate, but also changes in the shape and form of the land.

At an early period of the prehistoric age the level of the land over the whole of western Europe was much higher than it is now. At that time Great Britain was joined to Ireland on the one side and to Europe on the other, as you will see in the map on page 22. Where the North Sea and the English Channel and the Irish Sea are now, there was then dry land, broad plains, perhaps with lakes here and there, and rivers much longer and wider than any rivers that we who live in this country have ever seen.

Even our biggest rivers, the Severn and the Thames, were but little tributaries of these mighty rivers, as you will see if you find them on the map. The great river that flowed to the north, receiving as tributaries those that are now called the Rhine, the Maas, the Thames, the Ouse, the Trent, the Tweed, and the Forth, emptied itself into the ocean beyond the north of Scotland. Another, which flowed westward, received the Seine, the Somme, and tributaries from the south of England.

HOW OUR ISLANDS WERE ONCE UNITED TO THE CONTINENT OF EUROPE.

(Showing the ancient coast-line to the west and north of the British Isles.)

The plains through which these great rivers flowed might be shown on the map as covered with forests. In the depths of these forests roamed herds of wild animals that had moved across Europe from the warmer south, as the land became fit for them.

Some of these species of animals were such as live now only in countries with a hot climate—such as the elephant, rhinoceros, and hippopotamus. The climate and the forest-covered land were to their liking, and here they dwelt and multiplied. It was in this way that our land, long ago, became fit for the habitation of men.

CHAPTER III

THE WORK OF RIVERS IN THE ANCIENT WORLD

On page 20 is a map showing the regions of western Europe which during the Great Ice Age were covered with ice and snow. You will see that all but a small part of Britain, at the extreme south, was buried under snowfields.

Then the climate changed. By slow degrees the sun gained force enough to break the spell of that age-long winter. The glaciers and snowfields began to melt, and, as they melted, the waters poured in torrents down the mountain sides. The flooded streams thus formed found out the natural falls and folds in the land and became rivers, which dug out channels and made their way towards the sea. The rivers bore away great masses of rock and stones and earth, which they strewed along their courses.

Those of us who live in a hilly country know how even little streams, after heavy rain, become torrents, strong enough to tear up the ground and carry away quantities of stones and gravel. We have seen them rushing along swollen and turbid and brown, often doing great damage. At the close of the Great Ice Age, when most of the rivers of our country came into existence, this sort of thing happened on a very large scale.

Nowadays when we stand beside a river flowing gently through the meadows, it is not easy to realize that what we see is a river once wild but now tame. The rivers that we know in our country to-day are old, and, except in times of heavy rains and floods, generally steady-going and well-behaved. But at the early period of which we are thinking, they were young and wild.

A GLACIER IN A HIGH MOUNTAIN GORGE.

The Thames, for example, is a very ancient river. Even that part of it, up in the Cotswold Hills, where it has its source and is only a rill, is still very ancient.

In pictures like the cartoons in *Punch*, when the artist puts in a figure to represent the Thames, he draws an old man with a long beard and hair dripping wet, and calls it "Father Thames." But we might say, "Great-great-great-great-grandfather Thames," and then not put down nearly enough "greats" for his great age.

Looking back to the map on page 22, you will find the Thames in the days of its wild and turbulent youth. You will see that it was not then an independent river, making its own way to the sea, but a hanger-on, a tributary of the great northward-flowing river, which, though very mighty, has never had a name of its own.

In the days of his youth Father Thames was formed out of the torrents that tore down the mountain sides at the close of the Great Ice Age. The floods from the melting glaciers and snowfields were probably increased by tremendous rainfall ; and we must imagine the Thames at that time much wider and rougher than the river of to-day.

If we stand on the river bank by Putney Bridge where the Boat Race starts, and look across, we can see people walking along the embankment on the Fulham side, clearly enough to recognize from his general appearance any one whom we know ; and he could hear our voice if we were to shout across to him.

But if we could have been standing at the edge of the river at the time when the Thames was young, we should have taken up our stand near the top of the rising ground on what is now Putney Hill, and from that point we should have looked northward, across a great stretch of rolling waters towards the farther shore ; so far away that one man standing there could not have been seen by us at all, and no voice could have carried across that swollen flood.

When a river is young, as the Thames was in those far-off times, provided that it is fed with abundant rainfall and melted snows, it spreads itself far and wide over the plains, grooving out a path to the sea. On its way it drops a great deal of its load of sand and gravel and stones, and leaves them in its channel. So in course of time it tends to fill up its own bed, and become shallow and sluggish.

But in the case of the Thames and other rivers in our country, something happened to prevent this filling up of the channels. Very gradually the level

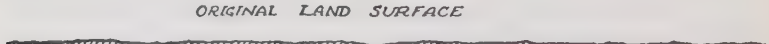
of the land was raised by a slow pushing-up movement from below. This upward movement of the earth acted on the current of the rivers, like the tilting of a dish, and set them running faster again. They scoured out their channels, worked their way deeper into the earth, and so left some of their ancient deposits of sand and gravel standing as banks, or terraces as they are called, on each side, at the level of the former flow.

In the valley of the Thames as it exists to-day, geologists find traces of these terraces, like steps one above another, showing that over an immense period, probably many thousands of years, this raising of the land-level occurred no less than three times. Each time it happened, the channel became narrower and deeper ; and the terraces, left high and dry, now mark the height and width of the river at the stages of its development. The ridge of which Putney Hill is a part represents the uppermost terrace on that side of the Thames.

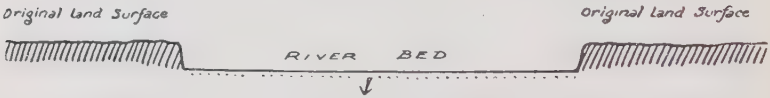
It appears also that in between the periods of up-raising of the land, there were times when the earth slowly sank. This sinking movement caused the flow of the river to slacken, and leave deposits of mud and sand along its banks, thus forming the clays and sandy or gravelly soils below the level of the terraces. Some of the deposits in such positions are called " brick-earths " because they are good material for making bricks.

These past events in the life of the Thames and others of our ancient rivers, such as the Great Ouse, the Wey, the Wiltshire Avon, the Test, and the Lark, are of great importance in the study of unwritten

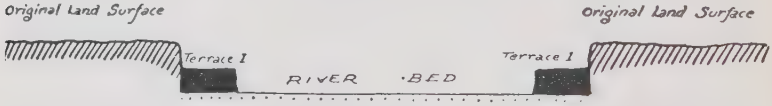
history, and it is worth while to try to make them clear by a diagram.



(1.) The land surface before the river cut into it.

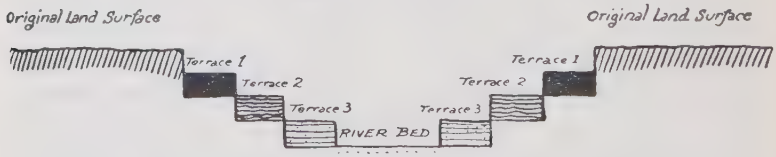


(2.) The bed of the river, which is flowing towards you, as the arrow points.



(3.) The river bed is lower, and terraces have been formed along its banks.

(4.) The river flows at a still lower level, and is still narrower. There are two terraces.



(5.) The level is still lower, and there are three terraces.

THE GRADUAL FORMATION OF RIVER TERRACES.

You will realize, of course, that the most ancient of these terraces is No. 1, because it was the first to be formed.

We have seen that a river works its way downward as men do when they are making a railway cutting; beginning at the surface and gradually getting down to the bottom. So the traces of the oldest work of a river's lifetime are at the upper part of the sides of its valley, and the most recent at the lower part where it now flows; the middle parts coming, in order, in between.

We should probably not find anywhere in the world a river valley with its terraces so plainly to be traced as the parts of the diagram suggest. However, there are ancient terraces more or less perfect in many places, and these are well known to geologists. They are the hunting-grounds of people who make a study of prehistoric man and his doings. These people are called archæologists, because they study archæology, or the science of ancient things. We ought to get used to that word archæologist, because we shall come upon it many times in this book.

If an archæologist wished to find some traces of animals and men who lived in the earliest times after the Great Ice Age, he would take every opportunity of watching while digging was going on among the gravels of the upper terraces. If he should happen to discover remains when digging the middle terraces or brick-earths, he would expect them to be less ancient than anything found in the upper terraces; while those from the lowest deposits he would suppose to be most recent.

But he would study very carefully many points about his finds and their position and surroundings before he could be quite sure. The earth-changes and the work of rivers in the ancient world, upheavals and floods, have produced effects which often puzzle

scientific men ; and much patient study is needed to make clear the facts of Unwritten History.

In spite, however, of such difficulties many important facts have been established. Though most of the remains of the men who lived on the banks of the ancient rivers have been swept away beyond all hope of recovery, many secrets hidden among the gravels of the river terraces have been brought to light, and no doubt many more ancient traces are still there awaiting discovery.

CHAPTER IV

TYPES OF MEN IN THE ANCIENT WORLD

THE diagram on page 28 shows the order in which the terraces were laid down along the sides of an ancient river valley, the most ancient being the upper formations, the less ancient the lower. This gives a clue to the order in which the events of those long-past ages took place.

Such knowledge as we have of the earliest men of the Old-Stone Age has been gained from the discoveries of archæologists digging in around these terraces.

In some cases the bones and other traces of men have been found side by side with the bones of animals. Bones and teeth of animals have been found in great numbers, and they have been sorted out into various groups. There are the kinds that can only live in a warm climate, those that live in a cold, dry climate, and those that live in a climate of the kind called Arctic.

Thus archæologists have been able to form an idea not only as to the order in which certain types of men inhabited these regions, but also as to the kind of climate and surroundings in which they lived. Where other things than bones—that is to say, flint tools or weapons—have been discovered, much has been learned by studying the character of the workmanship of these,

and the uses to which such tools were probably put. Archæologists have learned a great deal about the types of men in the ancient world, and the stages that they passed through along the path towards civilization.

During the long periods which are grouped together under the name of the Age of Stone, there appear to have been several different types of men in western Europe. The earlier types were, as we say, mere savages, which means that they had none of the arts of life which later races gradually developed.

In order that we may distinguish between these types, names have been given to them.

For the sake of convenience, everything we know has a name. When we meet a person for the first time, we want to know his name. Musical instruments have names ; so have household pets, ships, boats on the beach, and some railway engines. The boy who found the fossil called it a cockle-shell ; but a geologist would know its proper name—that is to say, its scientific name.

In science everything has a scientific name. If we are going to learn even a little about a science, it is worth while to learn at any rate the chief and commoner names of the things with which it deals.

The names that archæologists have given to the types of men in the Stone Age and to the stages which mark their progress from savagery to civilization, ought to be known to us for many reasons. One important reason is that we shall need them if we go to a museum to look at the prehistoric specimens. Here we shall find the objects labelled with the names that archæologists use. If we know what the names mean, we shall find our way about the cases easily, and probably

we shall enjoy ourselves. If not, it will be rather dull work.

We have spoken of the men who lived through the periods when the river valleys were being formed ; the men whose remains have been dug out of the ancient gravel-banks and brick-earths. These men were of more than one type ; but they are sometimes referred to in general as the River-Drift men.

At a later stage a different type of mankind inhabited the land ; and as their remains have been found frequently in caves, they are called the Cave-men. These two types together occupy the period known as the Old-Stone Age.

Still later, another race appeared. Because their tools and weapons of stone were of a new pattern, ground smooth instead of being simply flaked or chipped, their period is called the New-Stone Age.

Stone is taken as the guide in fixing these names, because a very large part of our knowledge of prehistoric men has been obtained from the study of the stone implements that they made and left behind them. Such relics do not perish ; and there are so many of them that it comes natural to us to call the period the Age of Stone, and to divide it into two—the Old and the New.

Archæologists use forms of these words taken from the Greek—Palæolithic, Old-Stone ; and Neolithic, New-Stone.

These names were adopted when the first lines of the science of archæology were being laid down, and then they were all that was needed. But since that time many fresh discoveries have been made, and Palæolithic and Neolithic are not enough. At a first

visit to a school it would be enough for us to be told that it was divided into two, the Lower School and the Upper ; but afterwards we should want to know the order of the forms or classes in each.

The Old-Stone or Palæolithic Period includes more than one type of mankind, classified according to their bodily appearance judged by their skulls and bones, and several groups classified according to stages of civilization. These stages have names taken from sites where specially notable discoveries of men's handiwork have been made. As some of the most important of these discoveries were made in France, the names are mostly formed from the French, as you will see in the table on page 40.

Some good specimens of the rudest forms of flint implements made by men of the River-Drift were found at a place called Strépy in Belgium. So the name Strepyan is sometimes given to flints of this rough pattern, wherever they are found. Strepyan is also the name given to the primitive stage which these rude implements represent.

In the same way the name Chellean, taken from a place in France called Chelles-sur-Marne, is given to flints of a higher grade of workmanship than the Strepyan. Specimens of the same character have been found in other places—for instance, in England at Kent's Hole, Torquay. But, all the same, they are called Chellean, as they belong to that pattern.

The next stage is called Acheulean, after a famous French discovery at St. Acheul. Acheulean specimens show a still higher degree of skill in flint-working.

Next comes the stage called Mousterian, named after the site at Le Moustier, in Dordogne, France.

Flint implements of Mousterian forms have been found in the south of England—for example, at Crayford in Middlesex and at Kent's Hole in Torquay. The forefathers of the people who made them had wandered a long way from the centre of France, but these flints are called Mousterian all the same.

As you will see from the table, these four stages make up the earlier part of the Old-Stone Age, called the Lower Palæolithic because its people were at a lower stage of civilization than those of the next period.

The Upper Palæolithic Period is also divided into four stages, which are named from cave-sites in France. Aurignacian (Aurignac), Solutrean (Solutré), Magdalenian (La Madeleine), and Azilian (Mas d'Azil).

During the first three of these stages the art of tool-making in flint and bone reached a wonderful degree of perfection. The makers were the Cave-men, who lived at a time when wild game was plentiful and hunting easy, so they had leisure to spend on their handicrafts. Not only did they make fine tools and weapons of many forms, often much ornamented, but they painted wonderfully life-like figures of animals on the walls of their caves. We have none of these cave paintings in this country; but other remains of the Cave-men, especially Magdalenian forms, have been found in Kent, South Wales, Derbyshire, Yorkshire, Northumberland, and as far away as the north of Scotland.

So far we have considered not so much types of men as types of men's handiwork; we might now look at types of mankind, classed according to their bodily form and appearance.

Only very scanty and imperfect remains have been found of the earlier people of the Old-Stone Age. We realize that as it is such immense time since they lived, their bones are likely to have perished. We have to remember, too, the great changes of the earth's surface that took place after the coming of man ; the long periods of Arctic ice and snow, and the sweeping away of whole areas by flooded rivers. Then, too, these people were few and feeble ; they led a life of savagery under conditions of hardship such as we cannot imagine, and they did not give burial to their dead.

However, in some few places human bones that belong to that far-off time have been discovered. One of the most famous of these discoveries was made in our own country at a place called Piltdown in Sussex, at a high-level above the river Ouse. Here, among the stones dug from a gravel-pit, were found parts of a skull and other fragments of bone, much broken, but enough to enable archæologists to reconstruct the figure of a very early type of human being. The Piltdown man was probably a member of the race who made the earliest-known stone implements ; and, in fact, one very roughly shaped flint was found with the bones at Piltdown.

In deposits which are many thousands of years later than the Piltdown gravel, remains of another human type have been found. This type is called Neanderthal man, from a place near Düsseldorf in Germany, where in 1848 a nearly complete skull was found.

For some time after the discovery of the Neanderthal skull, archæologists believed that this was a representative of the most ancient race of human beings that

had ever lived in Europe. But in 1895 a skull that was evidently of an earlier type was found at Galley Hill near Dartford in Kent; and in 1912 there was the finding of the famous Piltdown bones, belonging to an even more ancient race.

So it is now known that the Neanderthal type, though in some respects more ape-like and savage-looking than the Galley Hill or the Piltdown man, was actually later than they in time.

The people of the Neanderthal race established the stage of civilization called Mousterian. More is known about them than about the earlier people, because Mousterian remains have been found in caves, the dead having apparently been buried with some kind of care. They are thus better preserved than the bones of the early River-Drift people, whose dead were left to be devoured by wild beasts or to decay on the ground.

There are traces of Neanderthal man up to the end of the period called Mousterian. Then it is believed that a new race made their way into western Europe. To this race the name of Cro-Magnon has been given, from the name of a cave in Dordogne, France, where some skeletons well preserved were found.

The Cro-Magnon people were very different from the Neanderthal type. They were well grown and straight-limbed, and carried themselves erect; they had regular features and fine foreheads. Many remains of these people have been discovered; and though, in speaking of the races of men in the Old-Stone Age, there is still a great deal of uncertainty as to the earlier peoples, there can be no doubt as to the characteristics of the Cro-Magnon race. We shall

find out more about them when we come to a later chapter.

The names which we have briefly run through are set out in the table on page 40, where it will be seen they come under three groups: (1) the names of the chief divisions, Palæolithic and Neolithic; (2) the names of the types of men; and (3) the names given to the stages of civilization. You will not want to learn these by heart, but you ought to take a good look at them, so that you will know them again.

Of one thing, however, you should be careful in reading or remembering those of the third sort—the list beginning with Strepyan and ending with Azilian. They are not the names of tribes or nations of people.

Nowadays we speak of the Italian nation or the Italian people. We speak of Norwegians, meaning the people of Norway; or of the Rumanians, meaning the people of Rumania. But when we use the term Chellean, Mousterian, or Magdalenian, we mean something quite different. There never was a people called the Mousterians. The name is meant to suggest a sort of standard of what is sometimes called "culture," which people scattered over Europe had more or less in common. They may not all have had this standard at the same time. Most probably they had not. At one and the same period there may have been little groups away in the remoter western regions who were at an early stage of rough flint working, while those farther to the east and south had adopted later and better-worked patterns.

Such names are no more than a kind of label, very useful in museums to help us to understand that the handicrafts of men in the Stone Age developed in a

certain recognized order. Thus it would be quite reasonable to speak of a Chellean hand-axe, an Acheulean spear, an Aurignacian cave-painting, a Solutrean lance-head, or a Magdalenian carving in bone. But we should be only confusing ourselves if we took up the notion that there once existed a people who called themselves or were called, in our present-day sense, the " Mousterians " or the " Magdalenians."

It will help us to understand how vast is the difference between the prehistoric ages and historic times, if we realize that the Stone Age people had no names that we can recover, whether of persons or tribes or places.

In written history, as you know, a great many names even of the earliest recorded times have been preserved : names of ancient cities, such as Babylon and Troy ; and names of persons, such as Tutankhamen, Abraham, Moses, Alexander the Great, Julius Cæsar.

But all the names of unwritten history are lost, and we have to make them up for our own purposes as best we can. We invent them, and use them to help us to understand the broad fact that through the long prehistoric ages certain types of people lived, leaving behind them scanty traces from which we try to puzzle out what they were like and how they lived, whence they came and whither they went.

The names in the table are in the main those in general use by English, and to some extent by French archæologists. In other parts of Europe other names are used, some of them rather long and difficult. But those given here will be enough for most of us for the present.

TABLE I

Showing the order in which the chief types of men in the Ancient World are believed to have existed in western Europe.

Out of the mists of Antiquity appear the earliest known people, to whom the name of

THE PEOPLE OF THE DAWN OR EOLITHIC PERIOD

has been given.

Then came the **OLD-STONE AGE**, or
PALÆOLITHIC PERIOD,

of which the first stage is called

THE LOWER PALÆOLITHIC,

of which the step-divisions, according to degrees in the scale of civilization, are

Strepyan (or Pre-Chellean) }
Chellean . . . . . } RIVER-DRIFT MEN.
Acheulean . . . . . }
Mousterian . . . . . FIRST CAVE-MEN.

THE UPPER PALÆOLITHIC,

of which the step-divisions are

Aurignacian . . }
Solutrean . . . } LATER CAVE-MEN.
Magdalenian . . }
Azilian-Tardenoisean
(sometimes called the MESOLITHIC PERIOD).

Then came

THE NEW-STONE AGE,
or NEOLITHIC PERIOD.

THE AGE OF METALS.
Copper : Bronze : Iron.

TABLE II

Showing the Periods in reverse order, looking backward in time.

We are now living in the period of

MODERN HISTORY,

the records of which, including Mediæval History, go back nearly 2000 years A.D.
Before that was the period of

ANCIENT HISTORY,

going back to some 4000 years B.C.
Before that, came the long series of the ages of

UNWRITTEN HISTORY,

which goes back an uncounted number of thousands of years, and is divided into

THE EARLY IRON AGE,
THE BRONZE AGE,
THE STONE AGE, in which

are comprised

The New-Stone Age, or Neolithic Period,
[Some reckon here a Mesolithic Period]
The Later Old-Stone Age, or Upper Palæolithic,
The Earlier Old-Stone Age, or Lower Palæolithic,
The Eolithic, or Dawn Period,

before which the traces of prehistoric man are lost in the mists of Antiquity.

It is possible that some day this arrangement of names may be changed. Archæologists may agree to adopt other and perhaps simpler names, instead of those that are given in the table and those that are not. Already they seem inclined to shorten the list by leaving out " Strepyan," taking Chellean only as standing for the earlier phase. But the list given in the table is that of the names generally in use among English archæologists, and, after all, it is not a very long one.

You will sometimes see in comic papers and magazines pictures which are supposed to represent scenes in what is called " The Stone Age." They are sometimes called " Prehistoric Peeps," or some name like that.

These pictures usually show shock-headed men, dressed in hairy skins, fleeing for their lives from monsters like gigantic, long-necked lizards ; or perhaps a huge creature of this kind is shown thrusting its ugly head from behind a rock, and snapping up a man's dinner from under his nose.

Such pictures are not intended to be taken seriously, but they might be misleading, all the same. However, you will not make any mistake. You will realize that things were not like that in the Stone Age.

At no time since man has lived on the earth have there been any creatures like these monsters of the artists' fancy. In far-off geological times, millions of years ago, strange monsters inhabited the seas and lands ; and their huge fossil bones are quarried nowadays out of the ancient rocks. But the last of the giant reptiles and heavy-limbed land creatures of those times had ceased to exist long before the appearance of the human race.

All over the world where men dwell, or ever have dwelt, the types of animals have been of the same general form as those now living. There are lizards to-day of many kinds, but they are mere dwarfs compared with their representatives in the geological ages of the past. Even the great lizards called " dragons " that have been found still existing in the island of Komodo in the East Indies, though they may attain to twenty feet or more in length, are not gigantic ; and they are the last survivors of their kind. In the geological history of the world, the reptile group has dwindled and its members diminished in size, age by age ; while the group of mammals, to which the human race belongs, has increased in stature and in power.

CHAPTER V

ABOUT FLINT

We read the history of our country in printed books. The writers of those books read it in other books and in manuscript chronicles and parchment rolls which are more ancient than books. The history of the nations of ancient times is to be read in picture-writings and in inscriptions stamped on clay tablets or cut in stone.

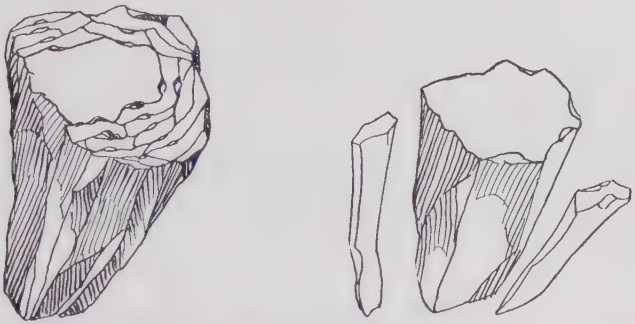
But there are no such records from which the story of prehistoric ages can be read. The men of the Age of Stone had no alphabets, nor any means of making a connected story of the things that happened to them. They could not carve on the monuments of the dead a memorial of their deeds. What they left as records was left by accident, and it is partly by accident and partly by good fortune that we can recover these traces, and, from such odds and ends of leavings, piece together the story of past ages.

The most important relics of the men of the Stone Age that have been discovered are human bones. But hardly less important and much more numerous are flints.

Flint is, as we say, imperishable. It neither rots like wood nor rusts like iron. A flint tool chipped by man thousands of years ago shows the marks of his handiwork as plainly to-day, when it is dug out of a

gravel-pit, as it did when it was fresh from the craftsman's hand. Flint is the hardest of common stones. When we speak of a thing as being " as hard as flint," we mean that it is very hard indeed.

One of the interesting and useful things about flint is that it will always break in a regular way. If you take a piece of limestone or granite, and strike it very hard with another stone or a hammer, it will smash



A LUMP OF FLINT, SHOWING HOW FLAKES ARE STRUCK OFF, LEAVING A CORE.

into bits of all sorts of shapes. But the breakage of flint is not like that. Under a properly directed blow a lump of flint can be broken along definite lines, when a series of edged flakes, one after another, can be struck off.

We might want to use the original stone itself as a tool, and trim it down merely to make it easy to hold, and give it a point, a cutting edge, or two cutting edges. If that were our object, we should probably not take much heed of the pieces that we had struck off, although it might occur to us that some of these,

having nice sharp edges, might make quite good little knives.

Or we might use the original stone as a block of material from which to get a supply of useful flakes. In that case we should go on striking as long as we could get good pieces off it ; and then throw the stump or " core " aside, like the core of an apple of which we have bitten off all the eatable part.

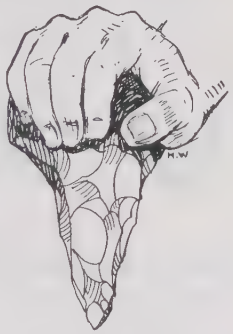
We shall see that at the beginning the earliest men of the Old-Stone Period used their flints in the manner first described. In later ages, when men, by long usage, had mastered the art of flint work, they adopted the second method.

The first tool-makers were wasteful because they did not know how to make the best use of their material. They could only shape out rough tools, and they had plenty of stone.

The later craftsmen were real artists. They must have had the desire to make their implements not only for use, but in some sense also for beauty of form. It is probable, too, that as the tribes increased the best quality of flint became scarcer. At any rate, in shaping the tools and weapons they wanted, they wasted nothing that was usable. The cores were trimmed down to the last possible flake ; and the flakes worked over, by chipping, into forms needed for different purposes—knives, scrapers, awls, saws, lance-heads, and spear-heads. Many of these are of beautiful shapes and most delicate workmanship. Though people nowadays try to imitate ancient flints in order to make money, their products can always be known by their clumsy appearance and poor finish. The art of making perfect flint implements was known only to the men of the Stone

Age, and to some so-called savages of later times. To us it is a lost art.

In the next chapter we shall read something about the earliest attempts made by men at the making of flint implements. These first attempts were, as you would imagine, very rough, and hardly to be distinguished from pieces of stone broken by natural means. But when we look at the flint tools fashioned by men even in the earlier part of the Old-Stone Period, as they are to be seen in a museum, we realize that these men had begun to practise an art. They knew what sort of a thing they wanted to make; they took the material that was to hand, and with all the skill they could command they made what would serve their purpose.

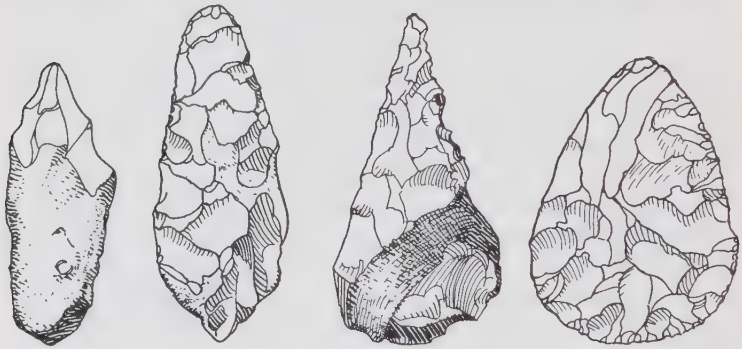


HOW A HAND-AXE WAS GRASPED.

Throughout the earlier part of the Old-Stone Period the typical tool is what is generally known as the hand-axe. French archæologists call this tool "coup-de-poing," which might be translated "hand-tool for striking." At the beginning it was roughly fashioned; but having invented a useful tool, the men of the River-Drift went on improving it during long ages. The picture on page 48 gives typical forms of the hand-axe as it developed in the course of time. Better than any picture, the specimens in a well-arranged museum will show that these forms were gradually bettered, not only because, as time went on, they had to be adapted to serve fresh needs, but also because their makers discovered beauty in the

forms themselves, and tried to make their handiwork beautiful.

No. 1, the Strepyan hand-axe, is roughly shaped out of a piece of flint. The upper portion has been



HAND-AXES OF THE RIVER-DRIFT MEN.

hardly trimmed at all, and a good deal of the crust of the stone remains.

No. 2, the Chellean hand-axe, is coarsely chipped all over, and shaped for holding in the hand.

No. 3 is of the Acheulean type. The butt-end is left rather thick, and the "business end" trimmed to a rather long tip.

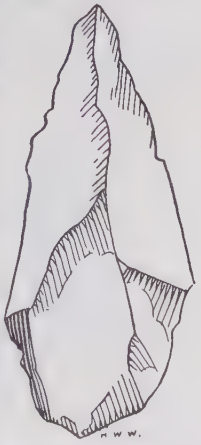
HOW A FLINT SCRAPER WAS HELD.

No. 4, a Mousterian type, is more finely worked, and is chipped along both edges to make it a better chopping tool.

The flakes struck off in making a hand-axe were often good enough to serve as small tools, such as knives and scrapers. The next picture shows such a flake, and the way in which it was probably held when in use.

RIVER-DRIFT MEN.
The fashioning of a hand-axe.

In the later part of the Old-Stone Period the hand-axe had become, as we say, obsolete. It was no longer made. The earlier Cave-men trimmed the larger flakes for use as knives or spear-heads. These were neatly flaked to give a plain cutting edge. The later Cave-men made a great variety of tools and weapons out of flint flakes, working them up to fine points and edges by what is called "retouching"—that is, by taking off any chips along the edge by the use of a pointed tool, possibly of bone. The picture on page 50 shows some typical forms of the Cave-men's flints.



FLAKED SPEAR-HEAD OF THE EARLIER CAVE-MEN.

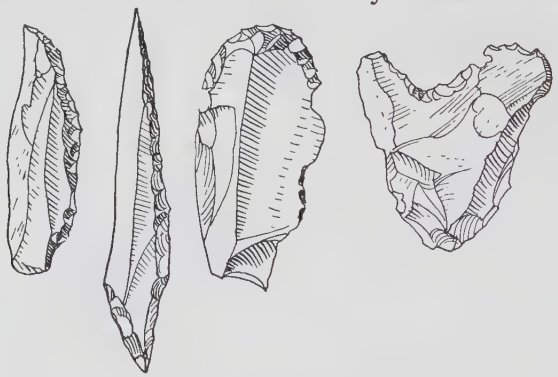
The Magdalenian Cave-men made great use of bone, which they fashioned into lance-heads and harpoons. They made needles of bone also, and these are specially interesting; for although we can only guess at the use to which some of the flint tools were put, needles mean sewing, and sewing means clothes.

Towards the end of the Old-Stone Period, at the stage called Azilian (see table, page 40), the art of flint-working died out almost entirely. It was revived in the Neolithic, or New-Stone Period, with the coming of a new race, whose axe-heads—ground and rubbed to a smooth finish—and finely chipped arrow-heads are as wonderful in their way as the Aurignacian and Solutrean lances.

If you live in a part of the country where flint is to be found, you may like to try your hand at flaking. You should get a piece at least as big as a thick Bath

bun, if possible. Flint from a chalk-pit or cutting is better than that which has long lain on the surface of the ground. Choose a handy, cobbly, rounded stone, that you can hold comfortably in the hand, to use as a hammer.

Then holding the flint firmly or resting on a support, with its broadest top end uppermost, hit it hard, a little to one side of the head. If you have struck hard



FLINT TOOLS OF THE LATER CAVE-MEN, WITH SECONDARY WORKING OR "RETOUCHING" AT THE EDGES.

and fairly, a flake will be shed off. This will have a length of the rind or crust of the flint down one side; but if you go on striking, you will probably get a few flakes without crust, and one edge at least quite sharp. If you take one home, and try it on a piece of bread, or even cold beef, you will find that it will cut quite well.

So much is fairly easy, but to trim the flakes to a point or a double edge is much harder. You will probably only break them into useless fragments, and very likely damage your fingers besides.

But the experiment will be very interesting and useful if it helps you to realize the wonderful skill of the men of the Stone Age, when you compare your own attempts with the perfect specimens in the museum cases, realizing that these are made from that very hard and brittle material—flint.

CHAPTER VI

THE MEN OF THE DAWN PERIOD

THOSE of us who go sometimes to the theatre can remember our feelings when the curtain has gone up and we are waiting to see the actors come upon the stage. The stage seems a long way off, and we wait and watch.

In this story of the ancient world we are looking on a strange landscape, a wide scene, with rugged mountains, thick forests, and great, flooding rivers. We see it from a long way off.

There are shadowy shapes of wild animals moving far away across the plain, or half seen among the trees at the edge of the forest, huge unfamiliar shapes. But we can see no sign of men.

Who were the first men to inhabit this country? What were they like?

Look at the table on page 40. You will see first, at the top of the list, the same name that appears at the head of this chapter—the Men of the Dawn Period.

For many years, when archæology was first studied as a science, it was believed that the men of the River-Drift were the first-comers into western Europe, and that their clumsy hand-axes, such as the one shown in Fig. 1 on page 48, were the most ancient forms of men's handiwork; this is the view still held by some archæ-

ologists. But others, who have studied the subject very carefully, think that there were men in these regions long before the coming of the River-Drift men.

We may peer into that shadowy landscape, trying to catch a glimpse of the earliest race of human beings, but we shall not see them. They were probably very few in number, and very timid and feeble compared with the large savage animals of those times. We suppose that they lived skulking and hiding in the forests.

We do not know what they were like. The farther back we look down the scale of time, the less likely we are to discover traces of men. It is true that in some distant parts of the world a few remains of some very early types of mankind have been discovered; but in our country it is chiefly from the faint traces of their handiwork that we guess at the existence of the Men of the Dawn Period.

Their handiwork is in the form of stones called Eoliths—that is to say, stones of the Dawn; because they belong to the time when the powers by which man is distinguished from the animals had only begun to awaken.

The capacity to invent and use tools, and to improve on them when once the first rough pattern has been shaped out, is one of the chief of these powers. A human being who has had the wit to snatch up a broken branch or a handy stone, and use it, has a great advantage when facing an animal foe.

The first attempts in any sort of human handiwork are always crude and rough. This is the case even in things of modern invention, when men have had many generations of skill and experience behind them.

The first printing-press was a very rude and clumsy affair. The first bicycles were heavy, ugly things, very different from the graceful machines of to-day. The first lamp was a mere cup scooped out of soft stone, with a bit of moss or fibre for a wick. The first saw was a flint flake, no longer than your finger, chipped into more or less regular teeth; a poor little tool compared with a modern steel hand-saw or cross-cut. Every tool or appliance that we use has been improved on again and again since the time when some man, cleverer than his fellows, took into use the first rough-and-ready thing that fulfilled his need.

THE GRAY'S INN LANE HAND-AXE.

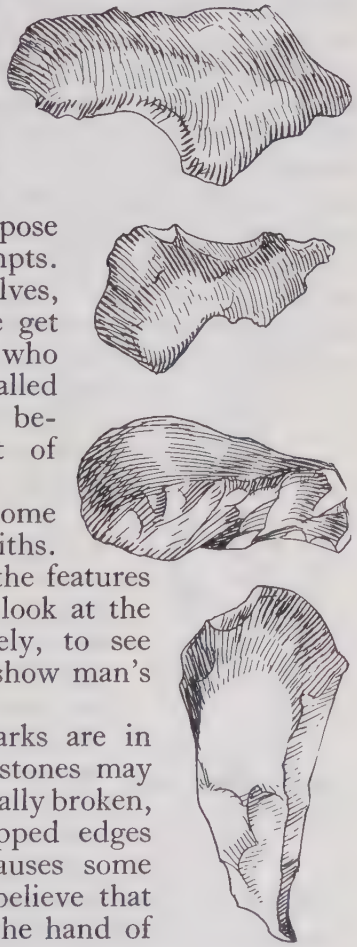
On page 48 is a picture (No. 3) of a stone hand-axe of the River-Drift time. Here it is drawn again rather larger so that its shape and markings may be more clearly seen. This is drawn from the famous specimen that was dug up in London, near Gray's Inn Lane, in 1690, and is now in the British Museum. It is known to students all over the world, because pictures of it have appeared in many books. In fact, no book—certainly no English book—on the Age of Stone would be complete without it.

At one time, before the discoveries of our own day, the Gray's Inn Lane stone was believed to be a relic of the earliest handiwork of man. Nowadays we know, as the figures Nos. 1 and 2 on page 48 show, that there were earlier forms of the hand-axe. The Gray's Inn

Lane stone, which is regarded as belonging to the Acheulean Period, is a really beautiful object. It is skilfully fashioned for holding in the hand, and for rough hacking and chopping it was no doubt a very effective tool. Nos. 1 and 2 in the picture, though ruder in form, have a very definite shape, and we can hardly suppose that they were first attempts. Seeing the specimens themselves, or specimens like them, we get the notion that the men who made them had what is called a tradition, and were not beginners in the difficult art of flint-working.

Here is a picture of some of the stones called eoliths. No picture can really show the features that matter. We have to look at the stone itself, and very closely, to see marks that are believed to show man's handiwork.

The fact that these marks are in many cases faint, and that stones may be found, undoubtedly naturally broken, which show points and chipped edges like those of the eoliths, causes some archæologists to refuse to believe that the eoliths were shaped by the hand of man. They say that a roller or a heavy



EOLITHS.

wagon-wheel passing over a flint in the road will break it into the likeness of an eolith, and that a big boulder pounding on a layer of flints in the bed of a torrent would make dozens of eoliths.

But we think of the slow and very gradual development of a craft from its early and crude beginnings. We suppose that those untaught men, living in the forests of the Dawn Period, may have armed themselves with broken sticks, and used stones as missiles. A stone with a broken edge could be used to hack the twigs and roots from a stout sapling, and so make it a better weapon. Some man tried his hand at breaking one stone against another to get a good cutting edge, and then found that he had a tool which could be used not only for chopping and scraping a stick, but also for grubbing up roots and for hacking to pieces the animals he killed.

MAN OF THE DAWN PERIOD.

Of the many thousands of eoliths which have been collected in England, many are very crude and rough. You might pick out from any gravel-pit natural stones that would appear to be very much the same as these. But eoliths collected over a district such as the high grounds in Kent or from gravel-pits at Ipswich, when arranged in groups, show traces of a common pattern, and fit into the scale of gradual development from the rough-edged hacking-stone to the shaped hand-axe.

This is the evidence that we have for the existence

of the Men of the Dawn Period. It is possible that the fragments of human bones found in the gravel-bed at Piltdown may be the remains of a Dawn Period man. At present we can only guess.

The eoliths suggest a vast antiquity and a people possessed of very little skill in human crafts. Modern scientists, whose province is the study of the structure of the human body, have reconstructed the head of the Piltdown man, and the picture on page 56 is made from their models. It exhibits a head very different from the human type of the present day. The head is small and flat, with a forehead so low that it was hardly a forehead at all and a sloping jaw. We cannot say that the picture does actually represent a man of the Dawn Period; but we can suppose that it may, and future discoveries may perhaps confirm this opinion.

CHAPTER VII

THE MEN OF THE RIVER-DRIFT

A SCOUT, following a trail, finds that the longer the time that has passed since the tracks were made the harder it is to pick them up.

So many long ages have passed since the Dawn Period that the traces of the men who made the eoliths have nearly all disappeared, and discoveries have been scanty. But when we come to the story of the River-Drift men, there is more to be told.

That is largely because in the days when the River-Drift men lived, the work of the great rivers was going on, and the terraces were being formed in which so many secrets are hidden. That is why the name of River-Drift has been given to this period.

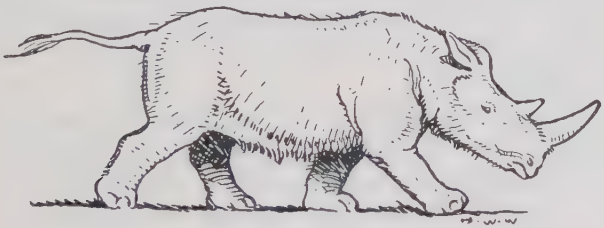
Not only have the bones of men been found, as well as great numbers of worked flints, but also the bones and teeth of many kinds of animals; so that it is possible to form a sort of picture of the lives that the River-Drift men led, and the animals they hunted.

After the passing of the Great Ice Age the climate became milder. The change probably came about very slowly. Season by season during a long course of years, these regions, released from the grip of the cold, became fit to sustain life.

First mosses, rushes, and coarse grass took hold;

then scrubby bushes and fern; and, later, forest trees made growth, and spread. Then from the warmer regions to the south of Europe, into which they had probably come from Africa, animals and birds gradually found their way into the new lands, and swarms of fish invaded the rivers. And after the animals came men.

Look at the map on page 22. You will see that they had land to travel over all the way. They did not march over as an army marches; they did not trek across like settlers moving onward in orderly parties.



THE RHINOCEROS OF ANCIENT TIMES.

They came, a few here and there, moving a little way in a long time. They were not explorers, but just hunters; and probably they chose their ground as men poorly armed might do, seeking the places where game was easiest to pursue, and fleeing from places where savage beasts most abounded. No doubt, also, they favoured the regions where flint, so necessary to them for their rude weapons, was to be found in plenty.

The animals of the River-Drift Period were very different from any to be seen in Europe in these days. Nowadays man has the upper hand, and his cities, roads, railways, and factories have changed the face of

the land. But then men were few and their works nothing at all, and savage animals had the upper hand.

The climate was warm and the vegetation rich, and the animals were those of the southern regions. There were herds of elephants—huge creatures of a species long since extinct, with nearly straight tusks—wagging their great ears and browsing among the forest trees. There were rhinoceroses routing among the bushes, and hippopotamuses on the river banks, or swimming about with their broad square noses just above water. On the plains were deer, bison, great elks, and wild horses; and, preying upon all these, there were lions and tigers—terrible beasts with huge fang-teeth such as no tiger has nowadays—and big savage bears.

Compared with these swift and fierce beasts of prey, man was a puny weakling. Man has no tusks or tremendous pounding feet like the elephant to crush the life out of a foe; nor a mighty thrusting horn like the rhinoceros; nor the sharp weapons of the lion and tiger—"the jaws that bite, the claws that catch." He can run to escape from a pursuer, but not so swiftly as the deer or the wild horse. Set in a state of wild nature, he must prey on the creatures around him or starve, and must hold his own against the hunting animals that are by nature mightier than he. We may well wonder how he managed to do it.

THE HIPPOPOTAMUS OF ANCIENT TIMES.

He did it by brains and tools. Brains taught him

how to fashion tools and weapons to make good his natural shortcomings; and the handling of tools increased the power of his brain and enabled him to make more and better tools.

Wild animals learned to beware of the strange creatures going about on two legs, and having hands with which to hurl stones with deadly aim, or deal blows with a club or thrusts with a spear.

THE CREATURE THAT HURLED STONES.

In a very interesting book by Mr. Richard Kearton, called *My Friend Toto*, there is a story which helps us to understand how it was that man with his first rude weapons could put fear into his animal foes.

Toto was Mr. Kearton's pet chimpanzee. One day, outside a settler's hut in Africa, Toto and his master were met by savage guard-dogs that growled and showed their teeth. The settler said he would call the dogs off, but Mr. Kearton said he need not, as Toto knew what to do. Toto picked up a stick in one hand and a stone in the other, and boldy advanced. The dogs growled and came on. Toto stamped his foot, threw the stone at them, and waved his stick over his head. The dogs turned tail and ran away.

We are not to suppose that an angry rhinoceros or a big-toothed tiger would have run away from a River-Drift man armed only with a stone and a club. But

the story does help us to realize that the ancient hunters became bolder when they had weapons in their hands, and found that, by joining together in the attack, they could secure their prey or beat off a savage animal foe.

If we piece together, like the parts of a jig-saw puzzle, some of the many bits of knowledge gained by the discoveries of archæologists, and look at them in the light of our knowledge of the ways of savage tribes in far countries to-day, it is possible to imagine some of the scenes in the life of the River-Drift men.

MAN OF THE RIVER-DRIFT.

Here we have an imaginary picture of the River-Drift man. He was shorter than the average Englishman of to-day. He stood with his knees bent, his body stooping, and his head low in front of his hunched-up shoulders. This must have made him look shorter still. His legs and arms, chest and shoulders, were probably covered with hair growing so thick that it was almost like fur. This cannot have been very nice to look at; but it gave him good protection against cold in winter and the heat of the sun in summer. His nose was broad and flat, with wide nostrils to enable him to hunt by scenting out his prey. His ears were longer and larger than ours, helping him to catch every sound—a movement in the bushes, the snapping of a twig. Whether he were hunting game, or himself being hunted, quick hearing might be a matter of life or death to him.

He had bushy eyebrows sprouting above his low brows, but the most strange feature of his face was the lower jaw. We should say that he had no chin, for his jaw sloped away into his thick neck. He showed his big teeth with every movement of his hairy lips, and altogether he was not at all the sort of man we should care to meet in a lonely spot. But if we could take a long leap backward in time, and come upon him in his native forest, he would probably be as much alarmed at seeing us as we should be at seeing him.

. . . . .

Now let us shut our eyes, taking that long leap back over thousands of years, and look at a scene in the time of the River-Drift men.

HIPPOS BY THE RIVER.

We are sitting by the side of the river. The bank here is high and grown with some scrubby bushes so that no one can see us, but we can look out over a big stretch of the river both up-stream and down.

It is a fine morning and early. There is a heavy mist hanging over the water, but the sun is up, and soon it will be very hot. The mist is thick and we can only see a little way. We can hear the beating of wings and the piping call of some water-birds, but we cannot get sight of them.

Presently the mist clears off a little, and away to the

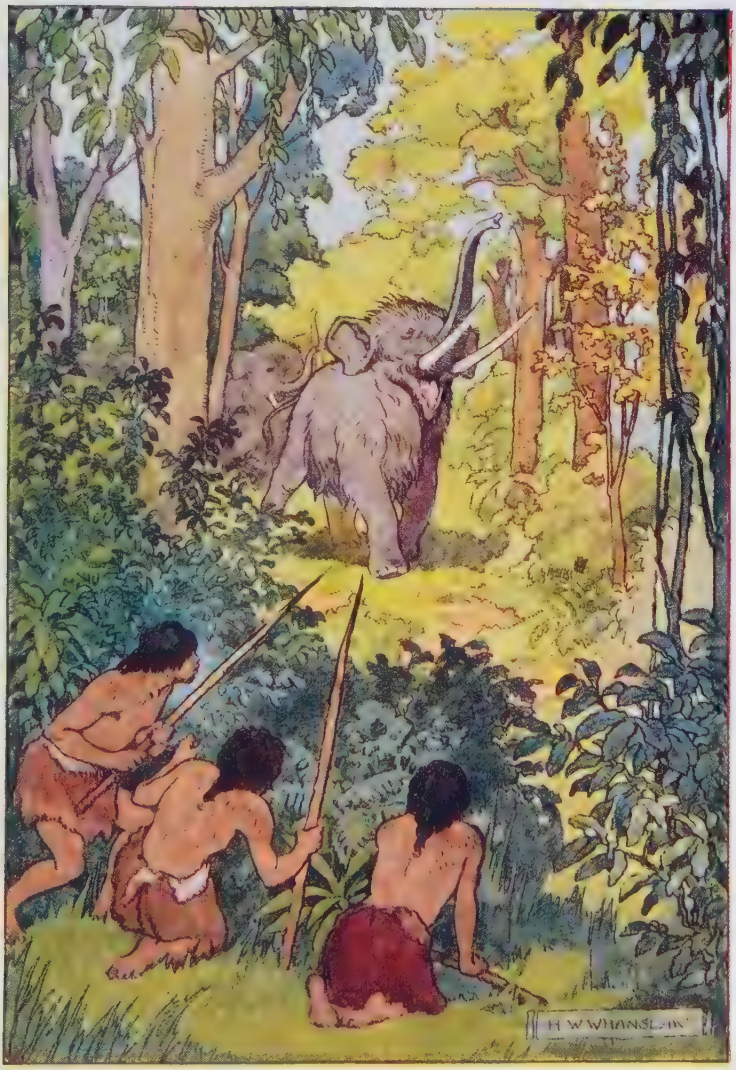
left, looking up-stream, we see what looks like a group of rocks standing up on a spit of sandy beach at the water's edge. They stand firm and solid, like a clump of black rocks.

All at once we hear a loud puff, almost as short and strong as the noise an engine makes when it is blowing off steam. It might be a giant puffing out loud breath. It came from the sand-spit, and we look that way. Then we see something suddenly show red through the mist, and a gleam of big yellow teeth.

The mist clears away all at once, and we see that what we thought was a mass of rocks is a herd of hippopotamuses huddled together on the strip of sand. One of them has just opened and shut his huge cavern of a mouth.

Perhaps something has alarmed them, for they begin to move. One after another they walk stolidly down into the water. We count one, two, three, four, five big ones. Then three little hippo calves break through and run down into the water with a splash. Six or seven more big ones follow sedately. They wade till their great bulky bodies are half under water, then let themselves down, and disappear without a sound. Only one big fellow is to be seen, floating with his great square head and the tips of his little prick-ears showing above the shining stream. Then he too sinks silently out of sight.

Presently along the river bank, coming towards us, we see a party of hunters approaching. We count them as they come along in single file. There are eight of them. They wear no clothes except a band of mangy-looking skin tucked about their loins. Their ragged hair is twisted up, and seems to be plastered



APPROACHING THE PITFALL.

River-Drift men have stampeded a herd of the straight-tusked elephants towards a pitfall. Hunters are waiting in ambush.

with grease. Some of them have pieces of wood or bone stuck through their ears or noses. Each man has a long pointed stick which might be called a spear; some have two of these, and the last man has three.

They go down to the edge of the stream at a place where the river bank is low and the water shallow. Here they halt, and we can catch the strong, unpleasant smell of the rancid grease which they have smeared on their heads and bodies.

We can hear the curious noises that they are making. They are talking, no doubt, but to us the sounds seem like grunting and yapping. We cannot make out anything that sounds like a word.

SPEARING FISH.

They point and make signs. Then six of them, each carrying his spear, wade out into the water, facing up-stream; the other two stay on the bank.

The six wade in above their waists, keeping in line, and then turn towards the shore, thrashing the water with their spears as they go. The men on the bank have laid down the spare spears, and stand ready at the water's edge.

Suddenly two of the six, and then another, strike down with their spears. Then all dash forward and thrust into the water. One has struck a fish. He flops under, grabs it with his hands, and throws it out upon the bank, where those waiting secure it. Another

quickly follows. In a few moments four fish, two of them large ones, are wriggling on the bank.

The men wade ashore. They do not need to dry themselves, for the water runs off their hairy, greasy bodies as off a duck's back. They stand about and jabber and laugh, with queer, barking noises. They gather up their fish. One of the men on the bank has taken from his girdle a length of bark-string, like bast. He pierces the fish through the gills, thus fastening them together in pairs, and slings them on a spear, tails down.

They go off at a jogging pace along the bank with the dangling fish, and are soon out of sight. But after a while we see them again, some distance off, beyond a bend, and can make out the dark blobs of their heads and shoulders in the water. We can even catch a glimpse of fish, flashing in the bright sunlight, as the hunters fling their catch on to the bank.

CHAPTER VIII

THE MEN OF THE RIVER-DRIFT

THIS time we will come to rather closer quarters with the ancient hunters, and try to see more of their life and doings.

Let us imagine that we are watching a Drift-man as he comes towards us along the river bank.

He is barefooted, and his feet are broad and splayed, the toes turned inward, the big toe apart, with great horny nails. He has very little in the way of clothing; about his waist he is wearing what looks like two or three pieces of animals' skin with the hair nearly rubbed off. His shoulders and arms and legs are bare; they are thickly covered with brownish hair, and look very brawny and strong.

He goes along with a shuffling, flat-footed tread, but without a sound. He keeps twitching his nostrils, as if snuffing the air to catch a scent; and as his broad nostrils open out, his big hairy ears twitch too. He is bareheaded, and his thick dark-coloured hair and his ragged beard are tangled and greasy. You would say that he has never used a comb in his life.

Round his waist is a girdle of hide with the ends hanging down. In it is stuck a short club with knobby top, blackened as if it had been burnt in the fire. In his hand he is carrying a long wooden spear; and this,

too, we think must have been made smooth by charring and scraped afterwards to a long and fine point.

He stands poking his head forward. His ears twitch so much that they seem to move to and fro. He is listening to something. Presently we can hear the sound too. *Click-click.* He moves towards the sound.

Behind a boulder higher up on the river bank, another man, clothed like the first, is squatting on his heels. Before him, half-buried in the ground, is a broad, flat-topped stone, and this he is using as an anvil. In his left hand he has a large flint stone, and in his right a heavy flint pebble, with which he is trimming off flakes from the side of the stone. While we are watching he comes to the end of this part of his task. He takes the flint in his hand, feels it along the edge ; and then again holding it firmly down, he strikes off one or two flakes. Again he tests it with his eye, turning it about to examine both sides.

At last he is satisfied. He holds it up and grins, showing his teeth—great strong teeth, which look as if they could almost bite the stone. He grunts with satisfaction.

The first man has now come up. He looks at the new-made flint, and grunts too. They both grunt and snort and cough : that is what it sounds like, but we realize that they are talking to one another.

The first makes signs, pointing in the direction in which he has come. He seems excited. The other soon becomes excited too. He jumps up, carefully tucks away his new flint into his girdle and picks up his spear, and the two shuffle off at a heavy-footed trot.

They leave the river bank and make their way towards the forest. Presently they come to a narrow glen, thickly grown with trees, bushes, and ferns. We can see more men, perhaps fifteen or twenty, near the farther end of the glen. They, too, seem to be excited, and are shouting and brandishing spears.

Our first man utters a howl, and they howl in reply; and some of them run out to meet the two, leaping and waving their spears.

Soon we find the reason for all this excitement. They have trapped a young elephant in a pitfall in the glen, at the place where the herds come down to water. It is a lucky catch, and every man must be brought to help to dispatch the great beast.

THE RIVER-DRIFT MAN GRINS.

However did they manage to dig out that deep pitfall? It must have taken days and days of toil with their rude tools. However, there it is; and scattered round it are the remains of the light platform of boughs and tufts of rushes that they laid over it.

For days they had watched in the forest till the herd should pass down the glen. Then with loud yells and the brandishing of burning sticks they made the great beasts stampede. In the wild rush one young bull elephant, jostled by his companions, trod on the flimsy platform and fell head foremost into the pitfall.

We can see the curve of the top of its back above the edge of the pit, and can hear its angry trumpetings.

The poor animal rocks and heaves in vain, for it cannot get free. There is a spear sticking in its shoulder.

The men have made fires at a little distance from the pitfall. Three are burning already and the smoke is drifting away among the trees. Some of them have lighted another fire and are bringing brushwood and fallen sticks. We cannot discover why they want all these fires.

A BREAK-WIND: THE RIVER-DRIFT MAN'S SHELTER.

Our two men join the rest, and go up to the pitfall. They leap about and threaten with their spears. They dare not yet attack their prey, lest, after all, he should heave out and escape.

Evening comes, and the fires flame up and glow in the failing light. All night the men keep watch and pile up the fires. They dance round in the blaze, chanting fierce songs. This is to scare the beasts of prey that otherwise might rob them of their quarry.

At length, after many hours, the poor animal sinks, worn out, in the pit. Then the savage, hungry hunters close in and thrust with their spears. After a few hours more the struggle is over. Armed with their heavy stone choppers, four or five of the men creep down into the pit. They toil and hack and tug; and soon the

heart and liver and great chunks of meat are handed up, seized upon, and borne to the fires.

There has been a hungry time of late, and now there is meat for many days.

Meanwhile the women and children have come down, in readiness for the feasting. They have put up rough shelters of stakes and boughs beside the biggest fire, and there is a great deal of noise and squabbling.

A RIVER-DRIFT MAN'S MEAL.

What a strange, wild lot they are! Women with children bound on their shoulders; a few old men wearing tattered skins; some youths and fewer girls—all gaunt and hungry looking. They yell and jabber round the fire.

Portions of meat are doled out by two or three of the elder men. The hunters are served first, the women and children last. They all claw their food with their hands and tear it with their teeth, gnawing at the broken bones like animals. The meat can hardly be said to be cooked: it has been laid for a few moments on the hot embers, and is devoured with the white ashes sticking to it. The people do not seem to mind a dusting of wood-ash on the meat.

Suddenly a wild hubbub breaks out. Two of the boys are fighting over a piece of meat. They drop it between them, and a woman with a haggard face and

savage-looking teeth snatches it up. An old man grabs it and falls over, with the boys scuffling on the top of him. One of the men takes up a stick and hits out right and left. After some snarling and whimpering order is restored, and the doling out and eating of half-raw meat go on as before.

At last, with the fall of night, most of the company, having eaten all they can, lie down to sleep. But through the dark hours some of the men are awake to keep the fire burning; and all night long some still keep going to the pitfall, hacking off pieces of meat, laying them on the hot ashes, and gorging.

From time to time, beyond the firelight, gleaming eyes shine in the darkness. Wild beasts have scented the meat and are prowling near; but they dare not approach the fires.

At daybreak all the people are up and eager to continue the feast. They seem as hungry as ever. As long as there is meat left they will stay by their rude camp. The last chunks will be rather "high," and, as we should think, quite unfit for human food; but they will not mind that. Only when they have stripped the huge bones bare will they move on, leaving their tumble-down shelter, the dead ashes of the fire, and a litter of gnawed bones, and wander away across country. They are a homeless pack, and can live only from hand to mouth.

CHAPTER IX

THE MEN OF THE RIVER-DRIFT

WHAT are we to suppose that the River-Drift men, who had such large appetites, found to eat when they had not managed to trap an elephant? There were herds of elephants in the forests in those days, because the climate was warm in the early part of the Drift Period; but it is not very likely that they were often caught in pitfalls.

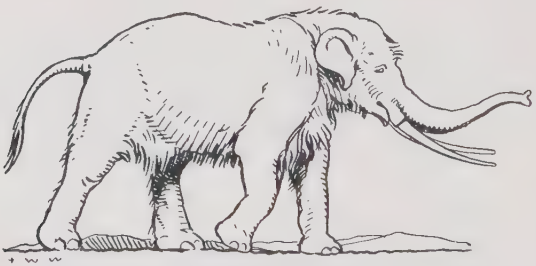
However, if an elephant, even a young one, were caught, it would provide substantial eating for a number of people for many days.

The species of elephant that was hunted by the Drift-men has long been extinct in every part of the world. Its bones have been dug up in many places in Britain; and if you go to the Natural History Museum at South Kensington, you will see a skeleton of *Elephas antiquus* (that is its scientific name), the straight-tusked elephant. It is not a complete skeleton, but it is the only one in the world; and there is enough of it to give us a very complete idea of the creature's enormous size. It is much larger than the skeleton of an Indian elephant, the largest modern species, which stands beside it. We may doubt if even the most experienced butcher in all Smithfield could calculate the number of steaks and collops that the Drift-men, with those thumping

choppers of theirs, could strip and hack off such a colossal carcass.

The skeleton was found at Upnor, near Chatham, among deposits which were laid down in ancient times by the river Medway. It took the experts of the British Museum more than a dozen years to get all the bones collected, cleaned, mended, preserved, and set up.

We suppose, then, that the Drift-men did not suc-



THE STRAIGHT-TUSKED ELEPHANT OF PREHISTORIC TIMES.

ceed very often in catching the great elephants or the great rhinoceroses of those times in their pitfalls. But the weaker members of a herd, or a sick animal, or one that had been wounded perhaps by a lion or a tiger, might have been surrounded and killed. Among the relics of the Cave-men large numbers of bones are found, showing the different sorts of animals that had been used for food. Many of these bones bear the marks of flint knives, and many have been split lengthwise so that the marrow could be got out. In a cave in Wales bones of hyenas have been found split in this way. But we should suppose that only people very

much pressed by hunger would eat hyenas. If we may judge from what we know of the habits of some savage people living the hard life of hunters to-day, we may suppose that the flesh of an animal found dead, even though extremely " high," was not despised.

But there were other sorts of food to be got. There were fish in the rivers and streams ; and perhaps, even in those early times, men had learned how to make a sort of floating canoe for fishing, by tying bundles of reeds together. Of this we cannot be sure, as no remains of such a thing have been found ; but some tribes who know little of the arts of life, but live near the water, make such canoes to-day.

There were crayfish, lizards, snakes, rats, squirrels, and other small creatures ; birds and birds' eggs ; grubs from the ground and from trees ; wild bees' honey ; and many wild fruits, nuts and seeds and roots. Some savage tribes, at times when food is scarce, have been known to dig up the roots of certain sorts of trees, strip off the soft spongy bark, roast it at the fire and pound it into a sort of meal ; poor stuff, no doubt, but better than nothing.

The existence of a people who live by hunting is hard. They are a hunting-pack rather than a community ; and they must have a large tract of country to roam over, or else the wild game will not suffice. With rude weapons it is but seldom that they can slay the larger beasts. In such conditions the weaker members of the pack soon fail. The sick or wounded drop out, and are not cared for. There is no home ; and the dead lie where they fall in the forest or marsh, and are left to their fate.

In Chapter V. we considered the lasting quality of

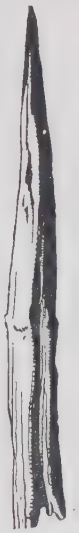
stone, and especially of flint, and saw that it is to this that we owe much of our knowledge of unwritten history. But it has always been thought probable that the men of the Stone Age had weapons of wood ; if only because even the most backward tribes visited by modern travellers have been found to use wooden implements.

What, however, was once guesswork is now a certainty, thanks to a wonderful and fortunate discovery made by an Essex archæologist on the beach at Clacton-on-Sea. He had found some remains of the River-Drift period where the tide had worn away the face of a gravel bank ; and visiting the place to dig, he saw something which he thought at first to be the pointed end of an antler, sticking out at the face of the bank. He set to work with the greatest care to dig it out ; and by degrees he recovered this wonderful relic, the broken end of a wooden spear, lying with some worked flints of the Acheulean type, and some bones of the straight-tusked elephant.

There is no more interesting relic of ancient times in any museum. It is just a stout piece of stick, a little longer than the handle of a cricket bat, and at its thickest end about as thick. It tapers to a point which is fine and sharp, and bears evident traces of having been hardened by charring, and then trimmed and scraped down to the point. Thus we have an explanation of the use to which certain flints of Acheulean and Chellean make were applied. They are scrapers carefully chipped to a little half-moon groove, and were used for scraping down spear-points.

The question of fire-making may have occurred to us in the last chapter.

No one knows when or how men first learned to make and use fire. It is a lost story. But we know that among living creatures only man has done it. Even the larger apes, which come nearest to man in the scale of animal life, cannot make fire. There is a traveller's story of two or three great apes squatting round the hearth of a deserted camp for the sake of the warmth, and howling mournfully as the blaze faded out. They had overcome their fear; but they had not the wit to gather sticks and revive the lost flame.

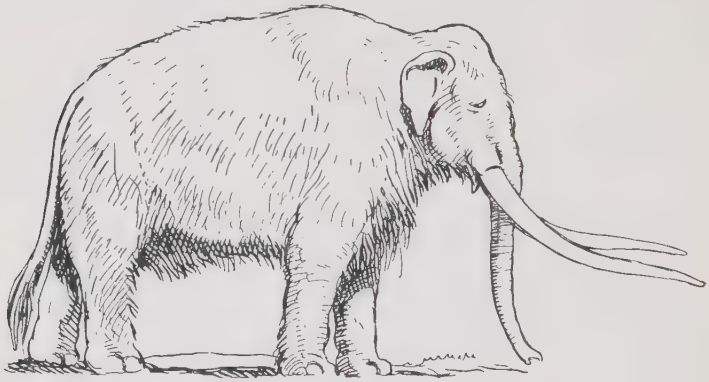


THE ACHEULEAN WOODEN SPEAR-HEAD. (*After S. H. Warren.*)

Perhaps the men of the River-Drift had learned the trick of striking sparks from flint and lighting dry tinder; or they may have got fire by twirling a dry stick in a socket of wood. It may be that, like some very backward tribes known to travellers, they could not make fire, but were never without it; because they always took care to carry some bits of smouldering wood from camp to camp, having first learned that lucky secret from some very brave ancestor who had dared to take a burning branch from a tree set on fire by lightning.

We do not know. Anyway, it seems certain that the Drift-men had fire. Its use was of unspeakable value to them; not only for guard-fires, and for such cooking as they did, but also for rousing in their minds something of the sense of home. Their homes were only makeshifts of the rudest sort, as we have seen; but to gather round the camp-fire is in some sense home-like,

better than the darkness of the dripping forest. Man could not have gained any mastery over nature, or taken the first steps towards civilization, if he had not learned how to make fire.



MAMMOTH.

The art of fire-making became specially important towards the latter part of the River-Drift period. For then the climate began again very slowly to change ; another glacial period gradually set in. Many generations of River-Drift men lived and died without any one noticing much difference ; but the change was taking place all the same.

The animals that need a warm climate moved across the lands, going southwards ; or else they stayed in the northern regions and died out. Their places were taken by others better fitted to endure the cold. Chief among these was the mammoth, the woolly elephant smaller than the old straight-tusked monster, and protected from the cold by a thick coat of shaggy brown hair.

Where the North Sea now rolls, there were, in those days, vast plains with marshes and shallow lakes ; and across these plains the mammoth found their way into our country. Nowadays the trawlers, dragging their heavy trawling-nets across the Dogger Bank, sometimes dredge up the solid, clumsy bones of these great prehistoric elephants.

With the mammoth came the woolly rhinoceros, taking the place of the old southern species. He too was equipped by nature with a winter coat.

The coming of the cold had an important effect upon man. Life in the open, with nothing but a flimsy wind-break as a protection against the piercing cold, became too great a hardship. Here comes in the value of brains. The later Drift-men hit upon the idea of caves as dwellings. They whose period we call Mousterian seem gradually to have taken to life in caves, where protection from wintry weather could be got, and a fire kept burning week in, week out. It was a vast change, and difficult to make.

In our time we have heard, as applied to houses, the term "with vacant possession," which means that you can move into a house only if the occupiers are willing to move out.

WOOLLY RHINOCEROS.

It is likely that in very few cases, if ever, were the Drift-men able to find a cave available with vacant possession. For in those times a species of large and savage bear, called the cave-bear, occupied

all the best caves. In some caves to-day we can see deep scratches in the rock where these great beasts clawed the walls to trim their huge claws, in the same way that cats use a post. The cave-bears were old tenants with long-existing rights.

But the Mousterian hunters had stout flint axes and fiery brands, and they had the courage of despair. They must be housed, or perish. They fought the cave-bears and took possession of their homes. No doubt they told stories of bear-fights to their children, of which there may be some dim, far-off remembrance in some of the bear stories in our nursery tales to-day.

UNWELCOME VISITORS.

We are not, however, to think of the old roaming hunters as taking to cave life all together or all at once. Probably there were many who did not, but kept on in the ways of their forefathers. The men of the Old-Stone Age were very hardy, or they could never have lived through the terrible winters that were creeping on at that time.

People of so-called savage races endure cold and exposure to a degree which we modern house-dwelling folk cannot realize. There is a story of an Englishman in Canada who saw a Canadian Indian one bitterly cold

day standing in the snow watching some winter sports. The Indian, according to the custom of his people, was naked to the waist, his back and shoulders being exposed to the biting air. The Englishman asked him how he could bear it. The Indian pointed to the Englishman's face, asking by signs whether he did not feel cold there. The Englishman said he was used to the cold on his face ; to which the Indian replied, " Me all face."

The great English biologist Charles Darwin, when he was a young man, made his famous voyage in the survey ship *Beagle*. In his book, *The Voyage of the "Beagle,"* he tells how he saw the natives in Patagonia sleeping out on the wet ground in that wintry climate, naked and coiled up like animals ; or sitting in their canoes with sleet falling and thawing on their naked bodies. The old Mousterian hunters were like the Indian brave, " all face," and accustomed, like the Patagonians, to coil up and sleep on the frozen ground.

A MOUSTERIAN HUNTER.

CHAPTER X

THE FIRST CAVE-MEN

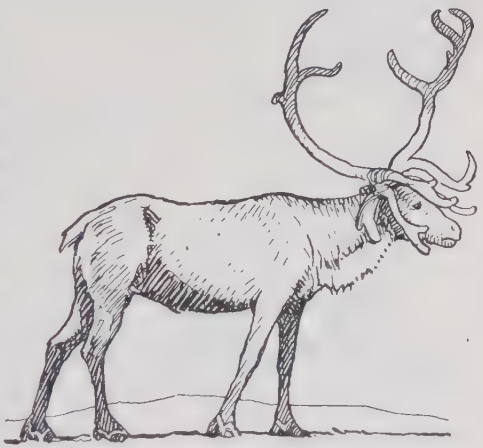
When we pass from the period of the River-Drift to that of the Cave-men, we are not to picture to ourselves any sudden change. There was a change, but it came about so very slowly that no one in his lifetime could have realized that anything out of the common was happening. As time went on perhaps some of the old men may have said that the winters were longer, the frosts more severe, and the summers shorter and cooler.

In the course of generations the hunters had probably noticed how scarce the big game of former times was becoming. The old men's stories of hunting the elephant or trapping the hippopotamus seemed like fairy tales; for the great beasts were gone, and only now and then, from some far-off region in the depths of the forest in summer, came a tale of an old bull-elephant or a scraggy herd of three or four following the ancient elephant roads on the hillsides.

The tall trees and the rich vegetation that had flourished under warm skies slowly died out, and the food of the big warmth-loving animals became scarce. So they disappeared, and with them the larger beasts of prey that hunted them disappeared also; only the savage cave-bears, holding to their fastnesses in the

high rocky valleys, lived on to prey on the deer and the wild goats.

Then the hunters told of the strange new animals that they encountered in the winter months browsing on the low trees and scrubby undergrowth—shaggy beasts with long curling tusks, moving in herds across the wide plains. These were the mammoth that we read of in the last chapter.



REINDEER.

The woolly elephant seems to have been an early comer after the change to colder weather had set in. Though he had his famous woolly coat, he does not appear to have been wholly a cold-weather creature. Perhaps he shed the thickest of his winter coat in the summer; and the Mousterian hunters may have found in the late spring-time great handfuls of his brown wool rubbed off and lying in matted lumps upon the ground.

Later on, another northern animal, the reindeer, came upon the scene. At first, perhaps, reindeer were scarce, and were only seen in winter. In the summer months bison and red deer and troops of rough-coated wild horses roamed over the plains. But when the snow lay deep, herds of reindeer appeared; and when

at last the climate became very severe, and only dwarf scrub and hardy mosses clothed the hillsides and plains, the reindeer, the musk-ox, and the mammoth were the hunters' mainstay.

The human race is, as we say, adaptable. Man continues to exist and to hold his own in spite of heavy odds and tremendous obstacles—because, all through the ages, there have always been some who would set their brains to work and invent means of overcoming difficulties.

The great warmth-loving animals—the elephants, hippopotamuses, and the broad-nosed rhinoceroses of the earlier time—dependent on certain kinds of vegetable food, had to migrate southward, or perish. But men, with wits to think out a new situation, could do better than that.

MUSK OX: AN ANIMAL OF THE FROZEN WASTES.

Instead of giving up the struggle, and either moving to a warmer climate or sitting down to perish, the Mousterian hunters adapted themselves to the new ways of life. We must bear in mind, too, that as the change was slow and long in coming, they had time to think things out and change their habits by degrees.

Probably at first it was only in the winter that they took refuge in the rock shelters. In the summer they roamed across country, following the big game as their forefathers did; putting up their roofless shacks of boughs and strips of bark as a shelter from the wind, but going back to the caves when deep snow lay on the

ground. Thus they became, to some extent, used to cave life, so that when the times of prolonged and severe cold at length came, they were less unwilling to forsake their wandering ways, and even ready to do battle with the cave-bears for their new homes.

It is difficult for us, who have been accustomed all our lives to four walls and a roof, to realize how strong is the dislike that people used to life in the open have for a confined dwelling. A thoroughbred gipsy would rather have his scrubby old tent out on the heath, even on a winter night, than sleep under a roof. So we may suppose that it was a long time before the more heedful among the Mousterian hunters could persuade the rest of the tribe that a cave would be a desirable dwelling.

We are not to suppose that cave life was altogether a joy. Most caves have been made by the action of water. A rivulet on a mountain side finds its way downward into a crack in the rocks, and the water, dropping and falling, enlarges the crack into a crevice, and at last to a grotto or cave. More especially does this happen when the rocks are of limestone, which actually becomes dissolved, slowly and in minute quantities, in the peat-stained water which has washed down the mountain sides. So, in the course of thousands of years, vast caverns with many chambers and narrow passages have been carved out. Nowadays many of these are dry, because the streams that formed them have disappeared. But they are dry only in dry weather. In a wet season water drips from the roof and trickles down the walls, and the floor is a puddle of fine wet mud.

In the days of the Cave-men it is likely that these conditions were no better than they are to-day;

probably there were fewer dry caves and more wet ones ; and a cave is always dark inside. So it is not to be wondered at that the cave-dwellers seem, as a rule, to have chosen the cave-mouth or entrance for their abode ; for here, at any rate, as long as daylight lasted, it was light. There was the solid arch of the roof overhead, space for the hearth, where a big fire could be kept always burning, and places near by under overhanging ledges where supplies of firewood could be stacked up out of the wet.

It is in such situations, rather than in the inner chambers of a cavern, that the remains of the earlier Cave-men have been discovered. Here lie the relics, buried under layers of earth and fallen stones—charcoal from generations of fires, bones thrown aside at meal-times, and broken flints, all lying in a trodden-down mass, often several feet in thickness. For here was the cave-dwellers' dining-hall and living-room and workshop. Here the men chipped their flint tools and trimmed and straightened the shafts for their spears. Here the women dressed skins and sewed garments. Here, beside the fire, stories were told and songs sung.

In some cases it would seem that a cave was inhabited for a long period, and afterwards deserted, perhaps for a long while, during which time hyenas took possession and made the cave their den. Afterwards the cave was inhabited again, and again deserted. Sometimes archæologists have discovered traces of two or more periods of habitation at different periods long separated in time. The remains of the later occupants are found in the upper, the earlier in the lower layers. Thus the uppermost layer might yield

remains of a Magdalenian occupation; the middle layers, Aurignacian; the lower, Mousterian. To identify these and sort them out is a task requiring the highest degree of knowledge and skill.

It comes to this, however, that an ancient cave floor is the richest of repositories for the archæologist. It is like an old treasure-chest, in which all sorts of important secrets may be lying locked up.

The River-Drift men, few in number and poorly equipped, wandered about over the country, camped in the open, and were at the mercy of storm and flood. They were liable to be swept away with their scanty possessions in a winter deluge. The wonder is that so much has been recovered from the wreckage of time to tell us something of their lives and doings.

THE HYENA: ANOTHER CAVE INHABITANT.

But the Cave-men were a more numerous folk, and for generation after generation they occupied their chosen sites. Their relics have been sealed up, under the shelter of rock-roofs, against the accidents of time, and now yield up the secrets that have been preserved for thousands and thousands of years.

One of the most interesting objects in the Prehistoric Department of the British Museum is a dug-out portion of a cave floor, shown in a glass-topped table-case so that you can see all round it. This came from the

cave of Les Eyzies in the valley of the Vézère in France, one of a group of caves, of which Le Moustier is one, that were occupied during the Mousterian period.

It is a mass of odds and ends—a jumble of ancient rubbish, dropped on the floor and trodden under foot during many generations, and left lying for thousands of years until archæologists dug it up in the nineteenth century.

Here are fragments of bone picked clean at meal-times, flint flakes that, having served to scrape those bones, were thrown on the floor, waste chips, bits of stone and pebbles; the whole being mixed together with earth, trodden into a solid mass, and in the course of ages covered by a thin layer of lime-crust.

When the old Mousterian hunters lived in the cave of Les Eyzies, we may be sure that this floor with its layers of half-decayed bones must have given out a nasty mouldy smell; but probably the inhabitants did not mind. It was only part of the odour to which they were accustomed; because they probably kept a store of meat in some recess of the cave, and this would be liable to become rather "high." In fact, with our ideas of ventilation and cleanliness, we should probably have found the cave air unendurable.

With the adoption of more settled ways of life, a very important change took place in the customs of the cave-dwellers. They began to give burial to their dead.

Compared with the Drift-men, they lived in security and in some degree of comfort. Perhaps when the hardness and savagery of the older time had passed, the Cave-men tended the sick and aged, and turned their minds, however dimly, to gentler thoughts of the dead.

Before the time of the Mousterian cave-dwellers no trace exists of what is called ceremonial burial. In more than one case, however, in France, Mousterian remains have been discovered which show beyond doubt that the body had been buried with some care and reverence. In one cave a skeleton was found lying in a shallow pit that had been dug in the cave floor, and with it were the man's weapons and the traces of a supply of food. There lay the flints, and, placed near the head, the complete bones of the leg of a bison, showing that a joint of meat had been laid beside the dead man in his grave, to be his provision in the after-world.

CHAPTER XI

THE LATER CAVE-MEN

On page 81 we have a picture of the Neanderthal man, the type to which the Mousterian cave-dwellers belonged. On page 94 is a picture of the later race, who made their way into western Europe towards the close of the Mousterian period. To this race, as we saw in Chapter IV., the name of Cro-Magnon has been given.

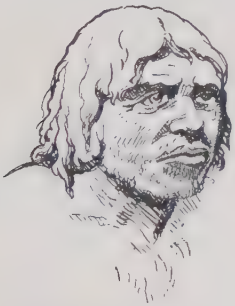
These pictures have been taken from drawings representing models made after careful study of the bones and skulls of both types ; and they probably give us some idea of what an average man of each of these two prehistoric races was like. From an examination of skulls and the bones of the body, scientists are able to make a restoration of the form and features of these types, to give us an idea not only of their appearance, but also of their dispositions and their powers of mind.

A man of the Neanderthal race had a low, flat skull and no forehead to speak of. Along the upper part of the face, just above the nose, he had a bulge, formed by a heavy ridge of bone across the skull. In his lifetime this was probably covered with thick bushy eyebrows, beneath which his eyes must have looked very deep-set. His nose was probably flat at the top, where

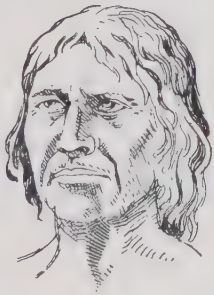
we have what is called the bridge, and very wide at the nostrils. His jaw, as a jaw, was strong and heavy, set with big, pointed teeth; but his chin was hardly a chin at all, for the lower part of his jaw sloped away into his thick, muscular, hairy neck.

The shape both of his backbone and thigh bones shows that he did not stand erect, but shambled with his knees bent forward and his shoulders hunched up.

The men of the Cro-Magnon race, on the other



NEANDERTHAL MAN.



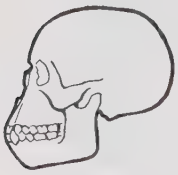
CRO-MAGNON MAN.

hand, had fine heads and regular features, shaped very much on the lines of people whom we call good-looking nowadays. They were of the height of average people of to-day. They carried themselves erect, and as they were active hunters, running and leaping in the open air, they probably had finer limbs than many of the poorer city-dwellers of our time.

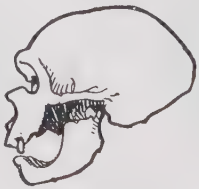
Along the line of bodily development, mankind has developed from a stock which in the dim past had certain characteristics in common with the creatures from which the apes have also sprung. But, at a period immensely remote in time, our animal ancestors took

an upward step, while the ancestors of the apes remained undeveloped. Thus the earliest types of human beings displayed certain features that are ape-like, especially in the formation of the skull and teeth.

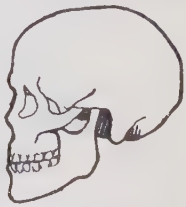
This does not mean, as some people have supposed, that men are descended from apes. What it means —and this is now generally understood—is that the human race, in some far-off geological period, sprang from an animal ancestry. But, long before the times of which we are reading in this book, the human



PILTDOWN SKULL.



NEANDERTHAL SKULL.



CRO-MAGNON SKULL.

creatures, gifted with reason and the power of speech, had already passed the apes in the onward march of life.

Ape-like features are very noticeable in the Piltdown skull, and also in the Neanderthal skull. In the skulls of the Cro-Magnon race these features have disappeared, and a type resembling the present-day white man's head and face is seen. The forehead is of full height, the skull-shape is regular, allowing ample space for the development of brains, and the jaw and teeth have nothing brutish about them. The chin, which is always an important feature in a man, is firm and well shaped.

The Cro-Magnon people are believed to have come into Europe from the south, perhaps from Africa, which at that time was united to our continent by stretches of land across what is now the Mediterranean Sea. Their bodily shape and their looks are enough to mark them as superior to the men of the old Neanderthal race ; but there is something else which proves them to have been a superior people—and that is their art.

The River-Drift men left no trace of anything which suggests to us that they were capable of any kind of fine art. We know that they had some sense of form and fitness, shown in the making of their well-shaped hand-axes. But under the conditions in which they existed, roaming about in packs, living from hand to mouth, and often hard-pressed by hunger, they could not have enjoyed the freedom from hardship and danger in which men are stirred to practise arts. Nor do we think that they had the power. They were of an inferior order of mankind. That is perhaps one reason why they could not hold their own, but died out, as they seem to have done, after the coming of the later race.

The more gifted Cro-Magnon men came on the scene at the time when the feeble remnants of the old Mousterian hunting tribes were dragging out a poor existence at the close of the long period of cold climate through which their generations had lived. With the gradual on-coming of a milder climate, the regions again became stocked with wild game ; but it was the Cro-Magnon hunters who had the benefit. The change had come too late to save the last of the old race, whose hunting-grounds were overrun by their more active and better-equipped rivals.

It has been thought that the Cro-Magnon invaders made war on the old inhabitants and killed them off. It is more likely that they just quietly edged them out.

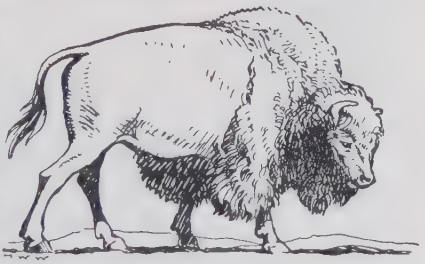
The ragged old Mousterian hunters, skulking about in remote glens and wild fastnesses, were perhaps seldom seen by the new-comers. In the face of the invaders, more in number and better armed than themselves, they fled farther and farther away from their ancient haunts, and at last disappeared altogether.

A CRO-MAGNON HUNTER.

Perhaps here and there some tough old Mousterian Cave-man may have put up a fight for his home; pursued to his refuge, he may have stood at bay, and fallen at last to the spears of the Aurignacian tribesmen.

Human memory goes far back. Some of the stories that we call nursery tales nowadays had their origin in the exploits of famous tribesmen in the dim past, and were handed down from generation to generation by word of mouth long before the days of written records. It is possible that the tales of savage ogres that lived in wild, remote strongholds may have had their beginning in the true stories told by the later Cave-men about the last of the fearsome-looking old savages of the Neanderthal race.

The coming of the Cro-Magnon race marks the beginning of a new period, which, as you can see by looking back to the table on page 40, is called the Upper Palæolithic or later period of the Old-Stone Age. You will see, if you like to refresh your memory, that in this period there were four stages, recognized as stages of civilization. The first three in order as shown in the table are Aurignacian, Solutrean, and Magdalenian. The people who developed the types of civilization, or " cultures," called by these names are believed to have been all of the Cro-Magnon race; though as the long period passed, generation after generation, differences of life and custom arose among them. Some of these different ways of life were due to changes of climate; for during the Upper Palæolithic Period the climate was still subject to change, and, before it ended, another spell of prolonged cold spread over the west of Europe.



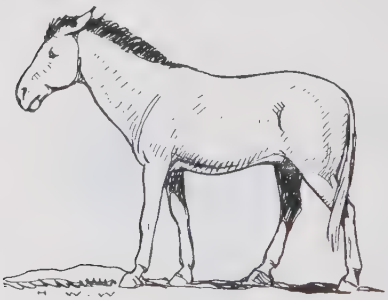
BISON.

The Aurignacian Period came at the beginning of the temperate conditions that followed the cold of Mousterian times.

The mammoth and woolly rhinoceros were still to be found, and there were herds of reindeer on the plains; but as the climate became milder, bison and troops of wild horses returned, and spread over the prairie regions. Preying on these were lions and hyenas. The cave-bears, that had never been ousted

altogether, held their own among the rocky fastnesses, and disputed possession of the caves with the Aurignacian hunters.

However, the life of the Cave-men of the latter part of the Old-Stone Age was a life of much greater security and comfort than the life of the old River-Drift men. They had abundance of game, and therefore no scarcity of food or of material for making clothes. They had a sheltered home and some sort of leisure time to devote to handicraft and art.



WILD HORSE.

The flint work of the cave-dwellers, and especially of the Aurignacian and Solutrean craftsmen, was of a kind quite different from the rather rough-and-ready flaking of the Mousterian axe-makers. These craftsmen were not content to leave the edge of a flake just as it was struck off the core; they set to work to improve it and make it more lasting, by taking off a row of tiny chips along one edge or both edges, to suit the purpose for which the tool was required. Look again at the picture on page 50.

Having once got their hand in, they carried out this system of secondary working or retouching, and adapted it to the making not only of a good cutting edge, but also a variety of sharp points. In fact, they succeeded in making almost every sort of tool that can be made out of flint; not only the ordinary everyday things, such as knives,

THE CAVE-MEN'S MEAL.

The evening meal beside the fire at the cave entrance.

scrapers, and borers, but also tools for carving and engraving.

French men of science have always been very clever in classifying and naming ; and the French archæologists have given names to the groups in which they have classified prehistoric flint tools and implements. The larger books in English on this subject generally give these French names ; but for our pictures in this book,

SOLUTREAN LANCE-HEADS FINELY CHIPPED.

A BORER.

A POINTED KNIFE.

the English names, though they are not so precise, are all that we need.

When the Aurignacian craftsmen had succeeded in making for themselves out of flint almost every kind of tool or implement they needed, they took to making things out of bone.

We can guess why they did this. It may be supposed that in some regions flint was becoming scarce. Flint was a very precious commodity in the Stone Age ; and, for long generations past, wandering tribes in

succession had spread far and wide, seeking out the regions where the richest supplies were to be found.

AURIGNACIAN LANCE-POINTS.

The people were becoming more numerous, and there may not have been enough flint of the finest sort for all the uses to which it was being put. So it seems likely enough that men who had their wits about them would look round for some substance to use instead. Bone would naturally be thought of, for there was plenty of it. There were long thigh-bones and shin-bones, some broken and some whole; and antlers of reindeer, as hard as bone, lying about inside and outside the caves.

The first bone implements made to a pattern were the Aurignacian lance-points. A shin-bone of a deer, lying dried and white on the sand, looks almost as if it were waiting to be trimmed and filed into a spike for a lance-head. The Aurignacian Cave-man took such a bone, cut out a piece with a flint saw, and filed it by rubbing it on a piece of fine hard sandstone. With this he filed the tip to a tapering fine point to fit like a tongue into a grove at the head of the shaft, or else cut a groove in the base of the bone

MAGDALENIAN CRAFTSMAN.

to fit on to a tongue-shaped tip at the head of the shaft ; after which the bone head was securely spliced on with fine sinew.

Later on, the Magdalenian Cave-men became very expert workers in bone. They tried their hands at making different kinds of useful things, until they had gained such skill that we might say there was nothing they could not do with bone. Everything they made was suited to its purpose and was neatly finished.

When a man had spent hours and hours getting an implement into perfect shape, he would naturally want to carve a device upon it, to mark it as his own. Once the fancy had seized him, he might go on with the device, making it into a regular pattern to ornament the piece.

Sometimes there would come a spell of bitterly cold weather, when the blizzards made hunting impossible ; or perhaps a time when after lucky hunting the cave-larder was full of meat. Then the hunter would settle down to his carving in a sheltered corner at the entrance. We may imagine him squatting beside a flat stone that served him for a bench, with his tools at hand, working away at his chosen pattern, scoring line by line with exact pains ; and every now and then holding out the half-worked piece at arm's length to get a good look at it.

CHAPTER XII

THE LIFE OF THE CAVE-MEN

Let us imagine that we have taken another long stride backward into prehistoric times. We are standing near the entrance to a cave. It lies high up in a rocky cleft of the hills, and to get to it we have had a long climb up through the forest. We clambered along a glen strewn with huge boulders. The hills rose all around, and some in the distance we could see were capped with snow.

Then we saw a rocky scarp rising ahead of us, and, coiling up against the face of the rock, a wisp of smoke. We made our way towards this, along a path winding among the fallen rocks; not a good path, but a crooked trackway. It led us to the cave.

We have taken up our place beside a big boulder, where we can get shelter from the wind. It is late in the autumn afternoon and bitterly cold. We are glad to be in shelter; but, what is still better, from where we are sitting we can get a clear view of the cave entrance, and of the pathway that leads to it.

The shadow of an overhanging rock lies at the entrance, and at first we cannot make anything out except that there is a fire burning on the platform of rock before the cave; but it is burning low. There are some people there, sitting in a group, who seem to

be busy with work of some kind ; but they are in the shadow, and we cannot see what they are doing.

Then we see that they are women, working at something on the ground. We guess that they are dressing a skin, for they are kneeling on the ground and pulling at something lying there, as if to stretch it.

We wish that we could see better, so we move nearer to the cave. Now we can see what the women are doing. They have the skin on the ground. It is probably pegged down, or held in position by stones on one side. Two of the women are dragging or stretching it, and another seems to be scoring or cutting it. We guess that she has a flint knife held firmly in her hand, but at this distance we cannot be sure. Only, while we watch, we see her take off a piece of the skin and lay it aside.

THE CAVE-WOMAN LOOKS OUT.

After a little while one of them stands up, comes a few steps forward, and looks out towards the place where we are sitting. She is not looking at us, but only in our direction, and as she stands upright we can see her very plainly.

She is rather short, with brown, sunburnt complexion and dark hair. She has a great deal of hair, which is stretched back from her forehead and seems to be tied or plaited behind. Her arms and legs are bare. She is wearing a garment which may be made of dressed hide, not hairy, covering her body to below the knees, and gathered about the waist with a girdle. There is a necklace round her neck which looks as

if it were made of little white shells or bone beads. She is not at all savage-looking; indeed, she is nice and pleasant to look at as she stands there shading her brow with her hand and gazing out into the open.

We can hear the others laughing and chattering, and presently they call to her. As she turns to go back to her work, she stops for a moment by the hearth. There are two or three long logs, trunks of small trees, with one end in the fire, the other end lying out beyond the edge. She takes each in turn and pushes it inward. A puff of smoke rises and little flames begin to flicker.

She goes back to the group, and work is resumed. The woman who is cutting knows what she is about. As the others hold and stretch the skin, she scores and cuts it with a sure hand; soon another piece, and another, are cut off and laid aside. The skin must have been thoroughly dressed and scraped, for all the hair seems to have been removed. It may be a deer-skin or a horse-skin.

Now they have got down to the last piece. The cutter rolls all the pieces into a bundle. They collect the scraps, and stooping at the low entrance, go one by one into the cave. All is quiet.

We hear the sound of people approaching along the trackway. Presently an old man comes in sight. He is hobbling along leaning on a staff, which he thumps on the stony path as he goes. He is carrying a bundle of sticks under his arm. Behind him come several boys loaded with bundles larger than his. Some more follow, two of them dragging a fallen limb of a tree; others are bringing young trees that have been pulled up by the roots.

They do not take their firewood to the cave, but

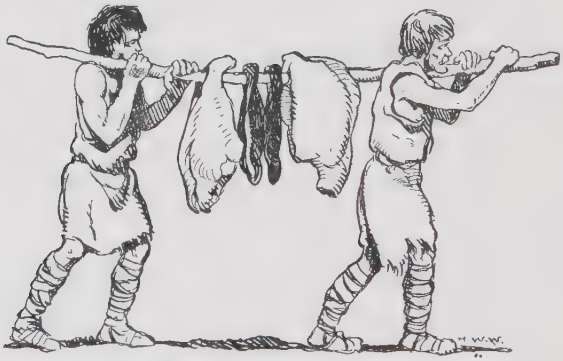
drag it along to the left, to a place where the rocks overhang, and there they set to work to pile it up. There seems to be some grumbling and quarrelling, and the old man scolds them in an angry, barking voice. Whatever it is that he is saying, it seems to have effect, for they stop their bickering, and soon have all the wood stacked up.

Meantime four women have come out of the cave, bringing something in their hands in long brown strips. They have sticks which they thrust into the ground beside the fire, and hang the strips, which we suppose to be meat, on these spits to cook. They call out to the wood-gatherers, and the old man waves his staff in reply and gives an order to two of the lads, who pull out some big dry boughs from the wood-stack and trail them along to the hearth. They must need a great deal of firewood.

All at once a shout is heard. Voices are raised from the fireside in reply, and the boys, who had been dawdling about by the wood-pile, come hurrying to the hearth. The shout is repeated, and the noise of cheerful laughter approaches. Then about a dozen men come quickly along the trackway. They pass along, and we can see that they are the hunters returning from the chase. They have had good hunting, for they are carrying among them no less than four long poles, each loaded with big joints of meat, haunches and forequarters, and great pieces of liver dangling down from the poles. The cave-party seem very glad, but not wildly excited ; so we guess that there is nothing very wonderful in the sight of such a plentiful supply. Game must be abundant, we think, for such a large supply to be taken as nothing out of the common.

Moreover, it looks as if the hunters had brought home only the choicest pieces and the best joints. If they can afford to leave behind for the hyenas and bears the ribs and all the less meaty parts of the game, there can be no scarcity.

At the sound of the shouting more people have come out of the cave, women and children, and old men, and there is much noise and chattering. The



SUPPLIES FOR THE CAVE-MEN'S LARDER.

hunters pile their spears against the face of the rock, and lay down their burdens. The women at once take charge of the meat. They carry a good deal of it into the cave, but some they prepare and put upon the spits.

By this time it is getting dusk. Sticks are thrown upon the fire and the flames start up, making a bright glow on the face of the rock about the cave entrance. In the glow of the firelight we can see the brown bearded faces of the hunters as they gather round the hearth, and can watch the women kneeling beside the spits to take and serve the portions that are ready.

The hunters and the old men squat down beside the fire. The women bring the cooked meat and lay it before the men on a broad, flat stone. The meal is begun. There is no disorder or squabbling. The hunters are served first, then portions are handed to the old men and to the women, the boys and the children. Every one has a share. A great deal of meat is eaten ; but the cooks seem to have made a good reckoning, for no more is needed. Certainly no more is brought out.

We are surprised to see that there does not appear to be anything to drink, and no sign of anything like a drinking vessel. Then we see that one of the women has brought out a bundle shaped like the body of a small animal, with a kind of neck. It is, in fact, a water-carrier made from the skin of a goat or some such creature, entire, with the holes where the neck and legs were, tied up. It is passed round, and all who wish drink from the nozzle. Drunk from such a vessel, the water probably had a rather peculiar and leathery taste ; but the people were used to it. Anyway, in times when there was no pottery, the people had to make use of the best thing they could devise, unless, every time they needed a drink, they chose to go to a stream and drink from their hands.

When the meal is finished, darkness has fallen. The women take the children and disappear into the cave. Then, by ones and twos, most of the men also turn in ; only a little group of the hunters stay quietly talking by the fire. At last three of them go along to the wood-pile and drag out some big ragged boughs. They push the butt-ends of these into the fire, give a last look round, and then, after pulling out some skins

from under a shelving rock, they cover themselves up and lie down between the fireplace and the entrance.

Sounds of coughing and snoring come from the cave. The fire flickers. Overhead the moon is bright, though hidden now and then behind dark clouds. Owls hoot down the glen, and from time to time the roar of a lion and the horrible cry of hyenas break the quiet. But the fire glows steadily on the platform, and the cave-dwellers within slumber in safety.

CHAPTER XIII

THE ART OF THE CAVE-MEN

THE Magdalenian bone-workers made many useful things out of reindeer horn. They must have had piles of antlers laid by about the caves ; and once they had found a use for them, they picked out the soundest and best for the work-bench.

With a sharp-pointed flint tool, which we may call half a knife and half a chisel, the craftsmen scored and cut out long strips from the hardest part of the antler, and trimmed and rubbed these down with a piece of sandstone to make spear-heads. The work took a long time, but that did not matter.

Even more time and skill were required for the making of another kind of tool in which the Magdalenian craftsmen excelled—their barbed harpoons.

We think of harpoons as implements for spearing fish. A land animal, a deer or a wild horse, wounded by a spear can be tracked and followed by the hunter, and in the end secured. But a seal or a fish in the water must be held when it is struck, and for this the harpoon must be barbed.

Judging from the large numbers of their harpoons that have been found among cave-remains, the Magdalenian hunters must have been fishermen too. Theirs was a period of cold climate ; and in the long months

of winter, when the snow lay deep and land-game was far to seek and hard to follow, no doubt they were glad to bring in fish to add to the food-supply.

Some of the harpoons are large toothed ones for spearing big fish, and there are lighter ones for the smaller fry. Some have the hooked barbs on one side only, some on both sides. Most of them are made with a shaped end to be spliced on to a shaft; but some have a hole bored through at the end, so that the harpoon could be secured by a line.

MAGDALENIAN HARPOONS.

A harpoon, or any kind of spear or javelin that is to be thrown, must have a straight shaft, or it will not fly true. No one could ever get a true aim with a dart or an arrow that was not perfectly straight in the shaft. It is quite plain to us that the Cave-men took great pains to make straight shafts for their harpoons and spears.

Among the relics found in caves are implements of the kind shown in the next picture. For a long time the object of these was a puzzle to archæologists. No one could guess at their use; but it was thought that, as they were so much carved and decorated, they might have been a sort of sceptre or wand of authority used by chiefs.

Then it was pointed out that these mysterious implements resemble very closely a tool made by the Eskimo and used for straightening arrows. From

accounts given by travellers we can guess how such a tool was used.

The stick to be straightened, having first been scraped smooth, was warmed over the fire and then slipped through the hole in the tool up to the point where there was a bend to be straightened out. The worker then grasped the tool firmly by its handle, and exerted force to bend back the stick at that point. When a shaft had been treated in this way two or three times, it could be tested for straightness by passing the tool up and down along its whole length.

A MYSTERIOUS IMPLEMENT.

The picture is made from specimens in the British Museum, where there are many of them. Look at them if you can, and see how the size of the holes varies. Some are large enough to slip over a walking-stick; others so small that they would take nothing thicker than a pencil. It has been thought that these small holes were for arrow-shafts. We do not know that the later Cave-men had bows and arrows; but they made flint points which look as if they may have been arrow-heads, and it is possible that these skilful craftsmen, who could make so many kinds of serviceable tools and weapons, knew the use of the bow.

Before we leave this part of the subject of the Cave-men's handicrafts, we must look at another set of museum specimens. These are the Magdalenian bone needles.

When men had become accustomed to the shelter and comfort of cave life, they would be liable to feel the bitter cold of the long winters. Clothing would be needed made into warm suits, not just rough skins tied up anyhow, which left the legs and shoulders bare. We know that the Magdalenian women were careful about the clothing for themselves and their families, because we find so many of their needles.

These needles were made by cutting and scoring out fine strips from the shin-bone of a reindeer or a wild horse, which is a very hard kind of bone. When cut out, each strip was about the length of a safety-match, and a little broader at the end which was to be the eye-end.

MAGDALENIAN BONE NEEDLES, AND THE PIECE OF BONE FROM WHICH THEY WERE CUT.

At this end a hole was bored with a very fine flint borer, first on one side and then on the other, till the two holes met and made the complete eye. It is astonishing, when we come to examine a number of specimens, to see how neatly and exactly these tiny holes were bored.

The needle was then trimmed to a smooth, rounded pin-shape by rubbing on a piece of sandstone, and a good point put on it. Great care must have been necessary in handling such a light splinter of brittle bone, and probably some needles were broken in the process. Many that have been dug out in the cave-remains are found broken, but probably some of these were broken in use. A perfect bone needle is an extremely interesting object, with a wonderful tale to tell if it could speak. A lady nowadays would not perhaps

find it suitable for fine embroidery, and perhaps a Scout or a Guide might prefer the slenderer but stronger steel needle of our own times for sewing on a button. But the Magdalenian women, stitching garments of dressed reindeer skin, no doubt found their bone needles very useful. Perhaps they used a sharp-pointed flint awl to prick a row of holes along the edge, then threaded the needle with a strand of shredded sinew, and put in stitches which made the seams of a leather jumper strong enough to stand a hunter's wear.

The designing, the shaping, and the ornamenting of implements and clothes gave plenty of opportunity for artistic powers to be developed among the cave-dwellers; but it is something more remarkable that we mean when we speak of the "art" of the Cave-men.

The later Cave-men left behind them works which are wonderful in themselves, and all the more so to us when we realize that the creators of these things had nothing of what we call tradition. Nothing in the way of copies or models or rules had been handed down to them. They had to find their own ideas and work out their own methods.

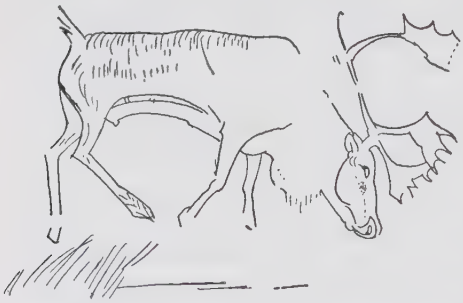
Their works of art were chiefly of two kinds: engravings on bone or on some smooth kind of stone, and paintings in colour on the walls and roofs of caves.

Figures of animals scratched or engraved on bone, ivory, or stone have been found at various cave-sites in France, but only rarely in Britain. Most of our larger museums have some specimens, but these are chiefly casts or copies of specimens from the French caves. An example from England is therefore of special interest.

It is not too much to say that there is no reason why

any one of us who has sharp eyes, looking about in likely places in a cave-country, might not have the good fortune to find a British specimen.

A few years ago two boys, members of their school natural history society, found such an object while hunting about for fossils in a quarry in Dorsetshire. They picked up a piece of bone which seemed to be a broken part of a horse's rib ; but it was not until they had taken it back to school that the carving on it was discovered. Then it was noticed that the outline of a horse's head and forelegs were firmly scratched—or, as we say, engraved—on the fossilized bone, with a row of fine-cut lines above the neck to show the upstanding hog-mane. This was a very lucky find, and the boys must have been well pleased with the result of their expedition.



THE CAVE-MAN'S ENGRAVED DRAWING OF A REINDEER.

The wild horse and the reindeer are the animals most frequently figured in the Cave-men's carvings ; but the mammoth, bison, deer, and chamois are also represented. There are rare examples of the woolly rhinoceros, the bear, the wolf, the hare, wild goose, swan, and seal. In some cases the figures are engraved, not on a plain piece of bone, but as ornament upon a tool, as we see in the picture of the shaft-straightener on page 109. It is possible that some of the figures done

CAVE PAINTINGS.

Aurignacian cave-artists and their handiwork.

on pieces of bone or slate may have been studies or sketches which the artist made for practice.

The finest examples are very lifelike, such as the mammoth on ivory from the cave of La Madeleine, or the reindeer at the water side engraved on a shaft-straightener. A very interesting example, scratched on a piece of stone, shows two troops of wild horses, each with its leader, drawn up in line. Travellers in Central Asia, where wild horses abound to-day, describe these animals as trooping just in this manner

A MAMMOTH ENGRAVED ON IVORY.

If, when you are next at the Zoo, you make a point of seeing the Tibetan wild horse, you will see how faithfully the cave-artist got the portrait of the prehistoric wild horse, a species closely resembling the Central Asian wild horse of to-day. (See page 114.)

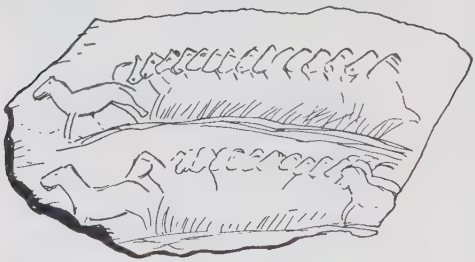
For many years after archæologists had become familiar with these engraved and carved figures, nothing was known of the yet more wonderful paintings, hidden away in the dark recesses of caves. No memory of them had been preserved through the long ages of unwritten history, and their existence had been entirely forgotten.

The first discovery came about in a very interesting way.

A Spanish gentleman who was interested in archæology had gone to spend a day digging in a cave called

the cave of Altamira near his home at Santander, and had taken his little daughter with him for company. He worked by candle-light, for the cave was dark inside ; and while he was busy with his pick and shovel digging away at the floor, the child took a candle and went peering around. She was little, and could stand upright in the low chamber.

Suddenly she called out " Toros ! toros ! " Perhaps her father was startled for a moment, wondering how a bull could have got into the cave. He went to where she stood pointing to the roof ; and, looking up, he caught sight of a group of animal paintings on the face of the rock. The " bulls " were bison drawn to nearly life-size, in colours, with horses, wild boars, and other animals. It was a wonderful picture gallery seen by the light of a candle in the dark cave.



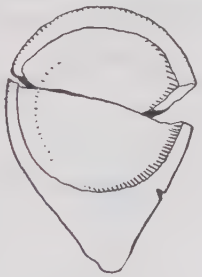
TROOPS OF WILD HORSES ENGRAVED ON A STONE.
(*After Cartailhac.*)

When the story of the discovery was told, people could not believe it. Archæologists went to see for themselves, and photographs were taken for the benefit of those who could not travel to Spain or crawl into caves.

Once archæologists had learned what wonders might be discovered on cave-roofs and walls, they examined other caverns in France and Spain, and found more of these animal pictures.

Not only have the paintings been brought to light, but also some of the tools and colours that the Cave-men used—flint-gravers chipped to a sharp beaklike point for scoring the outline of the figures upon the rock, pieces of charcoal for black lines and shadows, brown oxide of iron and yellow ochre for colouring. Stones have been found that were used to pound up these substances, still stained with the colours; hollow bones that were used to contain the paints, and shoulder-

A SHOULDER-BLADE USED AS A PALETTE.



AN ANCIENT LAMP.

blades of bison, which, being flat and provided by nature with a handle, made useful palettes.

One great difficulty has been to imagine how the cave-artists managed to make such complete and life-like pictures while working in the darkness or dim light and in situations where one would suppose the roof was completely out of their reach.

We can only suppose that they built some sort of a platform or scaffolding of poles, and also that they had invented lamps. In a cave of the Magdalenian Period in France a little vessel has been found which may have been a lamp. It is a shallow cup, or a saucer, of an oval shape, scooped out of stone. At the bottom of it, when

found, there was a dark, dried-up scum, which, when chemically examined, was found to be of the nature of animal fat. In lamps of this sort at the present time the Eskimo of Greenland burn blubber, using twisted strands of moss to form the wick.

A much more difficult question is why the cave-dwellers took all this trouble, creeping through narrow galleries and straddling on awkward ledges or shaky, propped-up footholds, to toil at their highly-finished paintings.

A BISON, PAINTED WITH WOUND MARKS.
(*After Cartailhac and Breuil.*)

It was because they had the desire so strongly upon them, that they pushed and wormed their way into the inmost galleries and chambers to discover places where the face of the rock on roof and walls was broad and smooth enough for paintings. In some places, where lines or bumps on the rock suggest part of the form of an animal, the artist seized upon these and worked them into his design.

Why did the Cave-men feel this overpowering desire? Perhaps it was partly because of the pleasure they took in their art itself; but also we imagine that it was because of their belief in the power of magic to help them to success in hunting. With this belief at the back of their minds, they made a likeness of the animal they desired to kill, and in some cases painted signs to represent weapons, or wounds made by weapons, near its heart. The sign was intended as a charm or enchantment; even in a dim, ignorant way a kind of

prayer: "Thus may I, with well-aimed spear, slay the bull that carries much fat meat."

A cave thus decorated might become a place for performing magical ceremonies, which formed the religion of these primitive tribes. Perhaps when the cave was lighted up by torches, the hunters danced, uttering their fierce cries and poising their spears at the painted figures on the roof.

In two caves of the Pyrenees, and so far in two only, figures of animals have been discovered, modelled in high relief out of clay. In one of these, called the cave of Montespan, there is a strange figure which may have represented a lion or a lioness, now headless and much decayed, modelled against the cave-wall. There remain, however, plainly to be seen, marks of spear-thrusts upon the breast and shoulders, where the hunters in savage dance stabbed at the figure of their dreaded foe. In another part of the cave there is the image of a bear, also headless, and the remains of other figures that have long since crumbled to ruin.

THE LION OF MONTESPAN.
(*After Breuil.*)

In the cave at Tuc d'Audoubert are two figures of a bull bison and a cow, modelled in high relief against an outstanding rock, wonderfully preserved. Near them, stamped on the clay floor, are dents which look like the heel marks of the feet of dancers. In other places the floor shows the prints of naked feet, impressed on the clay thousands of years ago, when the ancient hunters thronged the cave to take part in their mysterious rites.

CHAPTER XIV

RELICS OF THE CAVE-MEN

THIS chapter is a story of our own times. One morning, not many years ago, an English farmer was going to look after his sheep on the hills. His way lay through a rocky glen grown with clumps of birch and mountain-ash trees. Going up the glen, his dog found a fox, and chased it till it bolted into a hole among the rocks. The farmer had lately missed several hens from his poultry yard, so he went to look at the fox's hole to see whether there were any feathers lying about. He did not see any feathers, but at the entrance to the hole, where a lot of earth had been scratched away, he saw some bones, mixed with stones and loose earth.

He prodded about with his stick, and turned up quite a number of bones. A few days afterwards he met a friend of his who was interested in such matters, and he told him about the bones. The friend paid him a visit, and went to see the fox-hole. He collected a number of the bones and examined them very carefully, and sent them away to London.

Very soon an archæologist came down from London and was taken to the spot. He said that probably the hole led to an ancient cave which had been blocked up by a fall of earth, and that some interesting discoveries might be made if it were opened up.

A few weeks afterwards the archæologist arrived with a party of workers. They put up a hut in the glen, and set to work to dig and clear away the earth and fallen stones that blocked the entrance to the cave.

We will suppose that we have a friend among the party, and that we have received an invitation to go and see what is being done. We have been warned to put on our oldest clothes, and at this moment we are standing outside the camp-hut waiting for our friend, who is inside putting on overalls and old boots.

ENTRANCE TO A CAVE.

We walk along a narrow path, on which boards have been laid, to the entrance of the cave. By this time a great deal of the fallen earth has been dug out, and instead of crawling in on our hands and knees, as the explorers did at first, we have only to stoop very low.

Creeping along, nearly doubled up, we go forward for a few yards. It is very dark inside, but a little ahead of us we can see a light, and as we creep along towards it the height increases and soon we can stand nearly upright. We are now in the main part of the cave. It seems very large after the narrow entry. Our guide flashes a light up to the roof, so that we can see how high it rises above us, and how in places clefts and gaping fissures go up into darkness.

There are great natural buttresses here and there jutting out from the walls, and these we see are coated over with a kind of hard whitish stuff rather like sugar-icing, not very fresh, which in some places spreads out over the floor. This stuff, which we are told is called stalactite where it hangs down from the roof, and stalagmite where it has dripped and caked on the floor, is a deposit of hardened lime, which has been deposited by water during long ages.

STALACTITES AND STALAGMITES IN A CAVE.

Water, entering the cave from above, has become charged with lime, and, as it slowly trickled and spread over the walls, has covered the walls with this fine hard natural plaster.

We have to tread carefully, because the floor in some places is worn into hollows that are full of fine sticky mud; also because the workers have fixed lines of string across from front to back and from side to side, numbered, to guide them in their digging operations.

The light that we saw is coming from a lantern at one particular spot a little distance inward on the left, where three men are at work. The light is specially bright just now, because they have turned on a big electric torch.

They are all on their knees beside a shallow trench that they have opened in the floor. Their tools are

laid aside, and they are carefully feeling and groping about with their hands. One of them, who is directing the others, is dressed in a suit of overalls, an old hat, and rubber boots all plastered with mud. He is a learned professor and a Fellow of the Royal Society, but from his looks he might be a bricklayer's labourer.

He calls to us to come near. Our guide is wanted to lend a hand, for something very important has been discovered. The earth of the cave floor is loose, and keeps slipping, so more help is needed.

We come to the side of the trench and help to hold a board in position, so that the experienced workers may have their hands free. Although it seemed chilly when we first groped our way in, we are hot enough now, kneeling and holding on to the board, to keep back the crumbling earth.

UNEARTHING THE BONES.

The work goes forward again. Very carefully using a small digging tool and feeling about with his hands, the director searches the ground while one of his assistants shines the rays of the torch into the trench. With the utmost care he unearths a bone and puts it into a tray beside him, then another and another. There are several more bones in the tray. We do not dare to interrupt, but we wonder what the bones are. One of the assistants must have guessed our thoughts, for he says quietly, "Part of a skeleton—human bones."

Later on we come out into the fresh air and sunshine, and our guide takes us into the workers' hut. Inside are stacks of boxes and trays all carefully labelled. Seated at a camp table, an assistant is giving a final wipe over to a trayful of flints, and is sorting them into boxes. On another table is a large plan spread out, marked all over with figures and notes, and another assistant is writing entries in a big diary. It all looks very orderly and business-like.

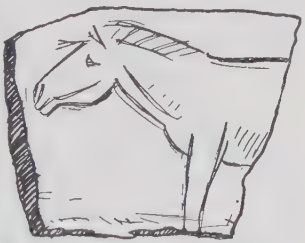
The sorter of the flints shows us some of the specimens. There are many hundreds of them, and they are all sorted out and labelled to show at what part of the cave floor and at what level they were found. Many of them are mere broken flakes and waste chips ; but others are worked pieces of several sorts, scrapers and borers, and some that you might call knives, and some neat little tools with half-moon side-chippings, which were no doubt made for scraping down sticks to be used as shafts for spears or darts. We try one of them on a walking-stick, and find that the ancient scraper just fits it. There are a few flints shaped like a leaf and beautifully chipped all over. These can only have been heads for spears or darts.

In other boxes are objects of bone which came from the upper layers ; two or three plain points and some barbed harpoons. Only one of these is whole, and it is a treasure. Others are broken, but can be fitted together, piece to piece. There are also some bone needles, with eyes so finely bored that they could be used to-day for sewing coarse cloth.

There are trays filled with bones, and from one of these our guide takes a great fang-tooth, which he tells us is a tooth of the cave-bear. In one corner of the

workers' cabin is a pile of dusty-looking reindeers' antlers.

In a box by itself, wrapped in cotton-wool, is another treasure. It is a piece of bone, apparently part of the rib-bone of a horse, about three and a half inches long. On the upper side are some scratches, but it is hard to see at first what they represent. Our friend dusts a little powdered chalk on the bone, and rubs his finger over it. Then, looking closely, we catch the shape of a horse's head, the shaggy upstanding mane, the forelegs and the line of the back. The hinder parts are not scratched in; but the rest is very true to life—a sullen, chuckle-headed wild horse of the plains.



A CAVE-MAN'S SKETCH OF A WILD HORSE.

Some time after our visit to the cave our friend sends us a cutting from a newspaper, giving an account of the exploration and its results. The whole is too long to quote here, but we may give the latter part, which is more interesting to us than the description of the cave itself, with which the article begins:

"The excavations hitherto, so far as the results have been studied, seem to show that in Palæolithic times there were at least three periods of occupation, separated by long intervals of time. The more recent or upper layers of the cave floor contained the bones of some existing species of animals, including the red deer, though by far the most numerous were bones and antlers of the reindeer, with which were discovered

some bone harpoons and also needles of bone, of characteristic Magdalenian workmanship.

"At a lower level the remains were chiefly those of the wild horse and bison. Bones and teeth of the cave-bear were also unearthed.

"It was at the level of what is regarded as the period of the second occupation that an interesting find of human bones was made. These had been subjected to some accidental disturbance, and are incomplete; but there were signs which indicated that the body had been buried in a formal manner. Some finely worked flints of Solutrean forms were found lying beside the remains. Relics from the lowest layers were few in number and the types as yet uncertain.

"Perhaps the most interesting discovery was that of an engraved bone, a fragment of a horse's rib, bearing an incised drawing of the head and forequarters of a wild horse. The blunt head and hog-mane, shown by a fringe of finely scratched lines, are clearly recognizable, and very characteristic of the cave-period of Palæolithic art."

CHAPTER XV

THE END OF THE OLD-STONE AGE

We have spoken of races or tribes coming into and gradually spreading over the regions of western Europe, and of races disappearing before the advance of a new people. These comings and goings are problems which archæologists are slowly working out, as facts and more facts are gathered together.

Of this or that people of whom we know something from the remains of their handiwork, we ask : Where did they come from and whither did they go ? We have learned certain things about them, and have come to realize that they were a people with ways and customs peculiar to themselves. We have invented a name for them ; but as yet we can learn but little of their place of origin and their end.

The question of the end comes to our minds especially when we look at the close of the cave period and the dying out of the arts of the later cave-dwellers. The period ended in a complete decline, for which it is hard to account. The caves with their wonderful wall engravings and paintings were deserted. The men who had lived and worked in them wandered away. The fine arts of wall-painting, chipped flint-work, and carving in bone seem to have been entirely neglected and forgotten.

Perhaps in all this there was something of what we should call a natural slowing-down after a period of great activity. Men had lived, generation after generation, through a long period during which much was done to enlarge the powers of mankind. Greater efforts were yet to be made; but before they could be entered upon, there came a lull.

The chief cause of the decline seems to have been a change of climate. The cold, dry climate of the Magdalenian Period gave way very slowly to conditions of mild damp weather with abundant rainfall, and the change, in course of time, affected animal life. The reindeer, the typical animal of Magdalenian times, cannot endure a damp climate. The herds moved away northward, and the hunters, or the more active of them, forsook their cave-dwellings and followed the reindeer into the cold regions of the north. There are many points of likeness between the Magdalenian weapons and house implements, and those used by the Eskimo at the present day. This has led archæologists to suppose that the race of the cave-dwellers has never died out, but that its descendants are to be found to-day in the Eskimo of the far north.

The coming of the warmer climate seems to have been accompanied by a slow sinking of the land over large areas of western Europe. Between the Continent and what is now Great Britain, and between England and Ireland, where already there were probably inland lakes and swamps, the sea flowed in, and what was once a great shoulder of the mainland (see map, page 22) became the group of islands that we know. It is probable, however, that the English Channel was not formed all at once; but that at the place where it is

narrowest there was a land-bridge or isthmus joining the cliffs of Dover to the coast of France.

While these changes were being slowly worked out, the life of the hunter was becoming harder and harder. The herds of reindeer were gone, and now the chief game was the red deer. But the red deer is a warier and a fleeter animal than the reindeer, and the scattered tribes left in the old hunting-grounds found that they had to hunt farther afield, and probably they often came home empty-handed.

Among the remains of this period, in some few cases, bones of dogs have been found; and it is thought that the hunters, finding game so hard to follow, had succeeded in taming the wild dog and training him as a partner in the hunting-field. If a man had taken a puppy or two from the wild dog's lair and reared them by hand, he would have made the beginning of that long process by which the dog's loyalty to the pack has been transformed into loyalty to the human master.

They hunted the wild pig, the roe deer, beaver, and many smaller animals, and they caught fish in the lakes and salt water lagoons. It is likely that at this period men began to rely more than before on wild fruits and vegetable foods.

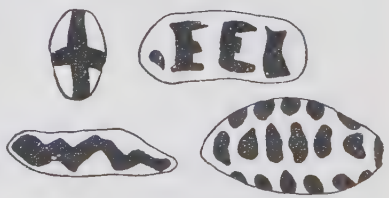
In the table on page 40 you will see the name Azilian given to this period. The name is taken from a site in the south of France called Mas d'Azil. Here the river has hollowed out a long cave, shaped from end to end like a tunnel; and it is from the remains discovered on what might be called the platforms along the sides of this cave that much of our knowledge of the Azilian Period has been gained.

The Azilian implements show a great falling-off from the well-designed and beautifully finished tools of Magdalenian times. There are only a few kinds of flints, of commonplace form and workmanship. There are harpoons cut out of red deer's antlers, very inferior in design to the hook-toothed Magdalenian harpoons, and without any artistic finish or ornament. These Azilian harpoons have been found at sites far away from the south of France, such as at Holderness in Yorkshire and Oban in the west of Scotland.

AZILIAN HARPOONS.

There is another object belonging to the Azilian period, of which so far no examples have been found in Britain. These are ordinary little rounded pebbles, which have been painted with red ochre in curious patterns. Some of the markings are a kind of far-away representation of the human form. The use to which these painted stones were put is not known, but it is likely that the people made them for some magical purpose connected with their religion.

Except at the site of Mas d'Azil itself there are very few traces to show that the people of this period any longer dwelt in caves. Perhaps in the damp rainy climate caves became too wet to live in. Also, people had to make their dwellings in situations where supplies of food were to be had, whether there were caves or not.



PAINTED PEBBLES.

MAGDALENIAN HUNTERS.

Hunters of the Later Cave Period, clothed in sewn skin garments hurling their spears at reindeer surprised in a snowstorm.

It seems likely that for some long time past men had known how to build huts of some kind ; for in some of the cave-pictures there are lines and marks which may have been intended to represent tents or huts. The horse-hunters who lived around the great rock-shelter of Solutré probably had an encampment in the open and built themselves some kind of wigwam.

The struggle for life in Azilian times forced the people in some regions to take up their abode on sea beaches or on the shores of inland lakes, and lead the life of fishermen and beach-combers. In such places they probably put up huts of poles thatched with reeds. Such dwellings would soon fall into decay and leave no trace ; but other traces of the lives of dwellers on such sites are plentiful enough.

Along the coast of Denmark and on some few sites in Britain, in Yorkshire and near Oban, there are great heaps composed of the shells of shell-fish, the refuse from the meals of the beach-dwellers of this period. These shell-heaps in Denmark are called " Kitchen-middens." They cover areas sometimes of several acres in extent and many feet in thickness.

In the British Museum there is a case showing a portion of one of these shell-heaps. Here we may see for ourselves the jumble of empty shells—cockles, limpets, whelks, and periwinkles, together with a few bones of animals and birds, and broken flints—the refuse which the people threw away around their huts, year in year out, till these vast heaps accumulated and reached the size of the " kitchen-middens."

In some places among these heaps there is found a tool peculiar to the kitchen-middens, a kind of chisel or miniature axe, called a " tranchet." This has one

face flaked down to a broad cutting edge. It would be useful for prizing open shell-fish or gouging limpets off the rocks. If at the seaside you have ever tried to lift a limpet from its hold on the face of a rock with your fingers, you will know how impossible it would be to collect enough limpets for a meal without some such tool as this. The butt-end would make a useful hammer for breaking the shells of whelks.

If you have read *Kidnapped*, you will remember that when David Balfour was shipwrecked and cast away on the island of Earraid, he had to eat raw shell-fish, and a very poor sort of food he found them. But if we are to judge by the remains they have left, we cannot suppose that the dwellers by the kitchen-middens found limpets, cockles, and whelks unwholesome living.

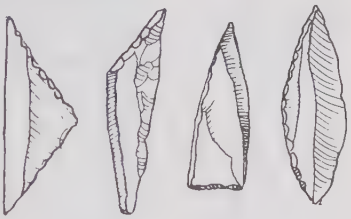
A TRANCHET.

We can understand that, under the changed conditions of life in Azilian times, there was no opportunity to practise the old arts of wall-painting and carving. But this does not mean that men had ceased to be clever with their fingers. They probably made many things required in their new ways of life which, from their nature, have long since perished, such as baskets, nets, and fish-traps. They may even have made boats of bark, or some kind of canoes by tying reeds into bundles and binding these into boat-shaped floats. Such canoes would have been of great use to the dwellers beside the great lakes and swamps ; but we can only guess at their existence in Azilian times from our knowledge of

the kind of reed rafts or canoes which are made by some primitive water-side people at the present day.

One kind of handicraft, however, was very much practised during this period—the making of miniature flint tools, the so-called " pygmy " flints. These are tiny flakes and points, some spiky like tin tacks without the head, some triangular or kite-shaped ; but all very carefully formed and finely finished, as we shall see if we examine some specimens through a magnifying glass.

It is not easy to realize to what use these tiny and delicate little flints were put ; but as the people made so many of them, and took so much pains in the making, there must have been some practical purpose in view.



PYGMY FLINTS.

(Enlarged to show the fine chipping. The tiny flints are less than half this size.)

We cannot think of any use for them as they are, but we can see that if mounted in wooden handles they may have made useful tools. Probably some were mounted singly as awls, or possibly as prickers for tattooing. Set in rows along the edge of a wooden blade, and fastened in with pitch or resin, the little tooth-shaped flints would have made a saw ; and a useful fish-spear might have been made by mounting a row along both sides of a wooden spike. One set of pygmy flints was found in Yorkshire, buried in peat, all trimly lying in a row at even distances apart. It is supposed that these had been the teeth of a saw or some such implement, of which the wooden handle or

mounting had completely decayed. Single ones were possibly mounted in some way to make fish-hooks.

Great numbers of these pygmy flints have been found in many parts of Europe. In one district in north-eastern France, called Tardenois, they are so abundant that the name Tardenoisean is often used with the name Azilian to denote this period.

How the pygmy flints may have been mounted to make a harpoon.

In any large museum you are likely to find some specimens of pygmies, possibly some Tardenoisean examples, but more likely some from your own district. Specimens have been found in many parts of Britain; and if you have a good look at those in the museum case, and get to know them by sight, there is always the possibility that you may find some yourself on some holiday excursion.

In the London Museum there are pygmies that were found among surface gravel or sand on Wimbledon Common and Barnes Common. Specimens have been found on open heaths and moorlands in Yorkshire and Lancashire, Staffordshire, Derbyshire, Suffolk and Surrey, Wiltshire and Cornwall, on the South Downs and the Cotswold Hills. There are probably many more awaiting discovery by those who have eyes sharp enough to find them.

Our knowledge of the Azilian—or, as we may now call it, Azilian-Tardenoisean—Period, with its many diversities of life, is yet far from complete. There are many gaps to be filled, and even a discovery of a few

pygmy flints, if carefully observed and the exact locality noted, may be of real interest and value to scientific men.

In almost every respect the ways of life in Azilian times were different from those of previous periods. The Old-Stone Age was passing away, and the New-Stone Age about to begin. For this reason some archæologists regard the Azilian Period as a period of transition between the Palæolithic and Neolithic, and call it Mesolithic or Middle-Stone Period. It will be enough for us to remember that it was a time when men's efforts were stilled down for a while before the oncoming of a new phase of human activity.

CHAPTER XVI

THE NEW-STONE AGE

If it has not happened to us already, it will happen some day that we shall leave twelve years old behind, and come into our teens. Yet although we know that we have passed out of one stage into another, there will not seem to be any particular difference, and things will go on very much as before.

In unwritten history, when we pass from the Old-Stone Age to the New, there does not appear to be any clear line of division. We are coming to a new order of things, but at first we cannot put our finger on any sign which marks the beginning of a new stage of civilization.

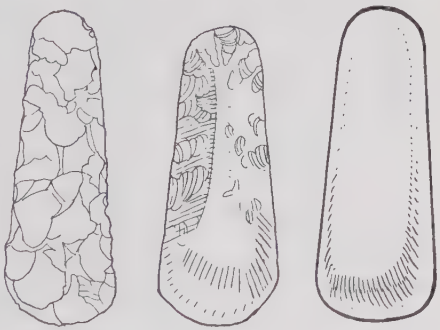
The New-Stone Age is so called because in that period the characteristic stone tools and weapons were fashioned in a new manner. The principal tool of everyday life, the stone axe, after being chipped into shape, was rubbed on a block of hard sandstone till the faces were smooth, or nearly so, on both sides, and the edge sharp all round.

The smooth-ground axe was not exactly a new invention. In Azilian times, here and there the beach-dwellers had been making small axe-heads which we call tranchets, as shown on page 130. But an edge that was got by grinding was better than the edge

that comes from a struck-off flake. Though the flake-edge would usually be sharper, it would be thin and breakable, and would soon splinter in use.

The old Palæolithic hand-axes were used for rough chopping or smashing rather than cutting, and bluntness did not matter.

During the Cave Period there were no axes. The hunters used knives and flint saws. But when cave life was abandoned and huts were to be built, men felt the need of a strong chopping tool that would not lose its edge. There were trees to be felled and trimmed, and poles to be cut.

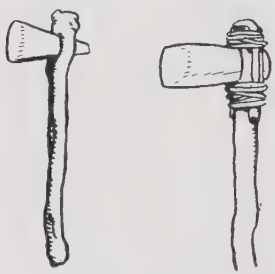


A NEOLITHIC AXE.
(1) Chipped. (2) Ground. (3) Polished.

The idea at first may have been to improve on the end-scraper, a sort of chisel-shaped tool, by making it stronger and heavier, and fitting it with a haft to afford a grip and leverage. But a flake edge would break away very quickly when used in chopping; and although it took a long time to grind down a flint axe, the edge so obtained would cut as well and stand much harder and longer use.

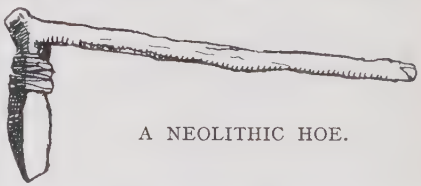
The ground and polished stone axe is the characteristic tool of the New-Stone Age. Once the form was devised, it was improved upon and adapted to various purposes. In general, the tool of this type was used as an axe or hatchet. With it a man could chop fire-

wood, fell a tree, kill a wounded deer or other animal, or fight an enemy. The axe-head was fitted into its haft either by jamming the stone tightly into a slot pierced through the shaft, or by inserting the head into a cleft at the top of the handle, fitting a pliant strip of wood over the head, and binding the whole together with bands of raw hide, which when dry would hold the contrivance firm. The Australian natives and other primitive tribes mount their axes in this way ; but we, accustomed to axes with a sound, socketed handle, can only wonder that tools so hafted will stand any sort of hard use.



HOW AXES WERE HAFTED.

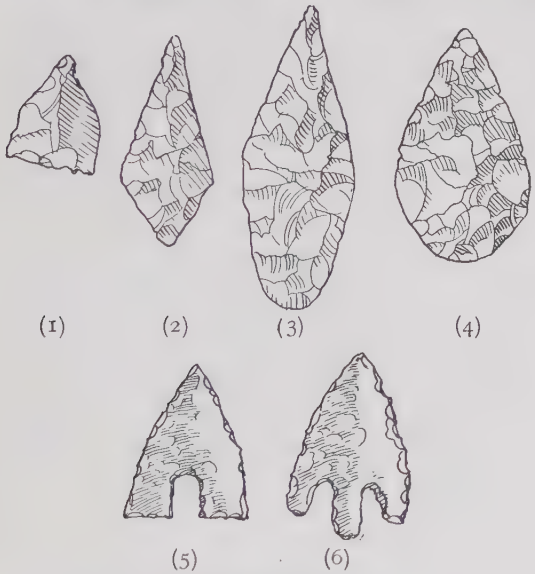
Hundreds, and even thousands, of these polished axe-heads and tools of similar shape, some quite small, have been found. The smaller ones were probably meant to be used as chisels or gouges, and were mounted on the straight. Some, having the edge at right angles to the line of the handle, were probably used as adzes or hoes.



A NEOLITHIC HOE.

The arrow-heads of the New-Stone Age were of several patterns. You can see six or seven different varieties in any good museum. Probably they were made by special craftsmen, who were indeed artists ; for skill of a very high degree must have been needed to shape, in a material so brittle as flint, objects as delicately finished as the finest specimens in the

picture below. An arrow-head of the shape of 1 and 2 was probably used for shooting at the lesser kinds of game. Barbed arrows, such as 5 and 6, were used for a deadlier purpose—for killing large animals or for war, for the barbs would prevent the arrow being



ARROW-HEADS.

pulled out of the wound. These, however, belong to the later Neolithic time.

It has been generally supposed that at the beginning of the New-Stone Age a new race of men had spread over western Europe and had entered Britain ; and that these new-comers brought with them the polished stone-axe, the bow and arrow, pottery, and other things which marked the beginning of the new period.

Perhaps at the beginning these invaders were few. We need not picture to ourselves the onward march of whole tribes, driving out the possessors of the land and changing all before them. Rather we might think of a few settlers penetrating in one direction or another, and gradually bringing in new customs.

The actual movements of men spreading over a continent and mixing with the older inhabitants were probably always very slow. But the spread of ideas was more rapid. Although perhaps a tribe, having its hunting-grounds in one region, would not have much to do with other tribes round about, the knowledge of an important new invention, such as the bow or the firing of clay to make pottery, would not long be kept secret. Knowledge would spread, and be taken up in time by people far away from the place where the new idea had come into being. Interchange of inventions tends to the spread of ideas and of words, and even to the alteration of the habits of people. But all the time it does not alter anything in men's bodily form or features, and races remain though words and customs change.

The new-comers probably came over from the Continent across the sea in canoes, either dug-outs or some kind of bark or skin boat. That is another reason for supposing that the invaders could not have been many. But they must have been hardy, resolute men to cross the open sea in their frail canoes. By this time the land connection with Europe had probably ceased to exist, and the channels now called the English Channel and St. George's Channel were fully formed.

The change which took place at the close of the Cave Period, when the great cold finally passed, was the last

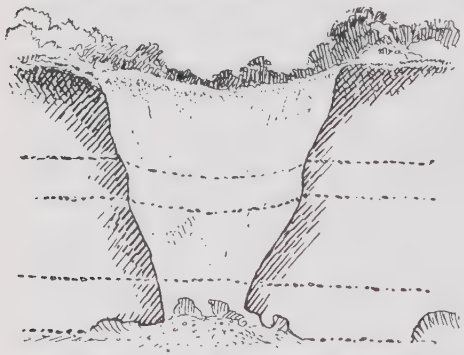
great change of climate to come over our country. Throughout the Azilian Period and onward, a temperate climate, very much as we have it to-day, prevailed. Thus the regions of north-western Europe became open to the spread of the races from the south and south-east. These southern regions had never been gripped by an ice-age, and the people dwelling in them had grown in numbers and had built up a civilization more advanced than that of the north-west.

In North Africa to-day lies the Desert of Sahara, a vast uninhabited region. But it was not always so. In the Sahara there are dry gorges that were once fertile river valleys, and great stretches of arid sand that were once green plains. Among the desert sand there are remains of ancient peoples who dwelt there at some remote period, having developed in very early times a civilization like that of our Stone Age. In those days there were land bridges between the north of Africa and Europe, and thus migrating animals and men had passed from one continent to the other. From the east also, as well as from the south, there were movements of peoples, passing stage by stage into the open regions of the north-west.

When tribes in prehistoric times wandered into new lands, they did so mainly because of the need for supplying themselves with food. Hunters must live by hunting, and they followed the migrations of the wild herds on which they preyed.

But in the Stone Age it was necessary also to obtain large supplies of flint. Regions where flint was abundant were favoured regions ; and wherever the remains of Neolithic man are discovered, there is generally flint in the district.

In Neolithic times bone was but little used for tools or weapons. Flint was the material most employed. In some places where the settlements were large, it is possible that the supplies began to run out. The flint-workers knew that the best stones are those dug out of the chalk beneath the soil. Underground flint is of a better working quality than that which has lain on the surface or been banged and pounded on a sea-beach.



HOW THE FLINT MINERS OF BRANDON HEATH MADE THEIR MINE SHAFTS.

(Section showing the layers of flint by dotted lines, and the tunnels or mine galleries at the bottom.)

During this period the workers began mining for flint. They dug deep into the ground, using picks made from the antlers of red deer. Flint in nature lies in bands or horizontal layers in chalk, as you may have seen on the sides of a chalk quarry or on cliffs by the seashore. When the miners, with wonderful skill and patience, had worked their way down to the lowest and best layer of flint, they cut underground galleries from which they dug out the good stone.

Such flint mines, filled up and long forgotten, have been discovered at various places in our chalk districts, such as at High Wycombe in the Chilterns and near Chichester on the South Downs ; but the most famous

are at Cissbury near Worthing and on Brandon Heath in Suffolk.

Those at Brandon are specially interesting, for although the old mines have been choked up with fallen rubbish for ages, the art of "flint-knapping" has never died out in Brandon village. The "knappers" still ply the ancient craft, using nowadays hammers of steel instead of the rounded hammer-stones of the prehistoric workers. They chip the flakes into neat little oblong pieces called gun-flints, which are exported to some parts of the world, such as West Africa, where the natives still use old-fashioned flintlock guns.

PICKAXE OF RED DEER'S ANTLER.

High up on the open heath near Brandon are Grimes Graves, the site of the ancient flint mines. The surface of the ground is pitted with cup-shaped depressions, more than three hundred in all, each formerly the shaft of a mine. Three of these have been opened out at different times, to the depth of more than thirty feet, and the side galleries have been explored.

In the galleries were found picks made out of red deers' antlers much worn and broken by use. More than three hundred of these were found, and some of them still bore the finger-marks of the ancient miners impressed in dried chalky crust on the handles. There were little cups of chalkstone, cut out to serve as lamps. These are of the size of small egg-cups, though shallower, and once held melted grease, with a bit of fibre for the wick.

Rounded hammer-stones and a few implements of flint and bone were discovered. The flakes in the dark galleries were as black as when freshly struck. Those half-way down, where the air had to some extent penetrated, were changed to a bluish tint; those on the surface were bleached white by long exposure to the air. We read in story books tales of hidden treasure. Buried under the chalky soil on Brandon Heath there are secrets as precious as gold which some day may be unearthed.

The tools and implements of everyday life of the New-Stone Period are more numerous than the Old-Stone remains, and they are more easily found, because, generally speaking, they lie near the surface of the ground.

The remains of the River-Drift men are found beneath beds of water-borne gravel: those of the Cave-men lie sealed up under layers of cave-earth and stalagmite under the overhanging roof of rock. But the men of the New-Stone Period were dwellers on open heaths and down-lands, where only the surface soil and the turf, like a coverlet, hide their remains to-day. Since the beginning of Neolithic times there has been no great change of climate, and nothing has happened to disturb the ground except where men with spades and ploughs have dug into it.

In some parts of the country, axe-heads have been found by turf-cutters and drain-diggers—some large enough to have been real axes, some small ones that were used as chisels, others that were probably hoes.

Once a gardener, digging a trench for celery in a garden in Norfolk, unearthed five polished axe-heads

all lying together. Some one, ages ago, had hidden his precious stock, and lost them for ever.

Arrow-heads are sometimes picked up in fields newly ploughed, especially after rain has washed the surface. One day a lady going out into her garden near Richmond Park, to see how her sweet peas were coming up after a heavy shower, saw an arrow-head, beautifully chipped out of grey flint, sticking up out of the soil.

Arrow-heads are not uncommonly found in some parts of the country, such as the Yorkshire wolds, the moors of Derbyshire, parts of Wiltshire, and Cornwall, and Surrey—for instance, around Haslemere. They are usually found singly ; and we may suppose that they were shot away by men out hunting and never recovered. An English archæologist has in his collection the skull of a wolf that was dug up at Barrington in Cambridgeshire, with a flint arrow-head piercing, and still lodged in, the bone. Perhaps this tells of a good shot made by some shepherd or cowherd of the ancient time, when the prowling pack attacked his flock.

In certain districts arrow-heads are rare, while axes are more frequently found. But we should seek in vain for any Neolithic flints in low-lying districts, flats and river valleys, in the Weald of Sussex, or in the flat clay-soil regions of the Midland shires. For in ancient times such areas were covered with dense forest and swampy thickets, infested by wolves, and no remains of the Stone Age are to be found in them.

CHAPTER XVII

LIFE IN THE NEW-STONE AGE : HOMES

BEFORE the beginning of the New-Stone Age, cave life had been abandoned. Here and there in caves of what might be called the better sort, Neolithic remains have been found, overlying those of the earlier period. But these are exceptions, and we must imagine the people of this time generally making their homes in the open, and living in huts.

Many improvements in ways of living became possible when men could build huts; not ramshackle half-shelters like the wind-breaks of the River-Drift men, but real substantial dwellings, dry and comfortable.

A cave is usually damp, as well as gloomy and badly ventilated. The bad air in which the Cave-men lived, the general stuffiness and the smell of refuse, of partly-cured skins and " high " meat, must have been dreadful, as we regard such things.

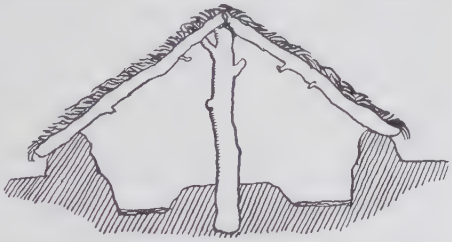
Caves are possible as homes only when the people are few; and even then, several families must pack in together. But when people have learned how to build huts that are reasonably weather-proof, they are much better off. As campers know, a hut can be put up in any place that is suitable, provided that you have a good hatchet. You want a dry dwelling, so you choose

HUNTERS OF THE NEW-STONE PERIOD.

Hunters, ambushed, shooting with bow and arrows at a herd of red deer driven across the hills by their companions.

a dry situation. You do not need to spend time searching all over the district as you must if you are seeking for a cave.

Your hut is your home, and though it is likely to be small, until you get some experience as a builder, at any rate it is snug. Then you have your own dwelling and your neighbour has his; each man with his family and his own possessions about him. Clever people think of little improvements—a better kind of hearth, or a screened entrance; and so in the course of a few generations most families have homes that might be called fairly comfortable.



SECTION SHOWING HOW A NEOLITHIC HUT MAY HAVE BEEN MADE.

(The mound in the centre was probably raised as a support to the roof-tree; but it may also have been used as a sort of platform for sleeping upon.)

The art of hut building was not learned all at once. Long periods must have elapsed during which better methods were slowly being discovered, and improvements could only be made when men devised better tools. With the imperfect tools they possessed, the early hut-builders could not raise walls of any height. They dug down some three feet into the ground, and piled up the thrown-out earth to form a firm low wall around the edge of the pit circle, leaving a narrow gap to serve as an entry. To hold up the roof they probably set up the trunk of a small sapling tree as a prop, in the middle of the floor; and to this, as a centre support, they fixed light poles, sloping to the top of

the wall, to carry the thatch. Such a sapling would have branchlets ; and these would be left, shortened back to form pegs on which clothes and other articles could be hung. This roof-tree was a very important part of Neolithic man's hut ; and the builder would choose his tree carefully, and spend much time chopping it down with his stone axe, and afterwards trimming it to suit.

On Hayes Common in Kent, some years ago, traces of a Neolithic village were found, consisting of a number of shallow round holes, like saucer-shaped depressions in the turf. These holes were all that remained, for the huts had fallen to decay ages before.

The discoverers dug down till they reached what had been the floor, at a depth of about three feet. The largest of the huts had measured twenty to thirty feet across ; these had probably been dwellings. There were also smaller holes, at the bottom of which charcoal and burnt stones were found ; showing that fires had been made there over and over again. These had probably been open hearths or fireplaces where several families did their cooking. It would not have been safe to light a fire large enough for cooking in the dwelling-huts, because of the risk of setting the roof on fire.

Early in the Neolithic Period the people had begun to keep cattle. This was a great advance. When men have their own cattle they need not depend so much on the uncertain chances of a hunter's life. When people live only on wild game, each little pack or group of families needs a wide tract of country as hunting-grounds, or else they will starve. But when they own

cattle, they can have milk, and perhaps curds and cheese as well as meat.

No one knows how the men of the New-Stone Age came by their knowledge of stock-keeping, or when cattle were first domesticated. Such knowledge may have come from a southern people ; and it may even have been that cattle already domesticated were brought over from the Continent. But if you have read *The Children of the New Forest*, you will realize that it is not a very difficult thing to tame and bring up cattle from a wild stock ; and this is perhaps what the Neolithic cowkeepers did.

The old men and lads tended the cattle, while the stronger men spent most of their time hunting ; for still there was everyday need of game for the larder, and a love of the chase is part of the nature of mankind.

The huts of the Neolithic people were grouped together into a village with some sort of fence or stockade of posts around it, and a gateway, through which all came and went.

On page 148 is a map of England, showing the areas in which traces of Neolithic dwellings and burial-places have chiefly been found. These are all high-lying districts, such as the North and South Downs, Salisbury Plain, the Chiltern Hills, the Derbyshire and Yorkshire moors and wolds ; regions high but not mountainous, where there were wide open spaces on which cattle could graze, and gentle slopes that could be dug and hoed for crops.

Look at the low-lying country between the North and South Downs, for instance, called the Weald. In those times the Weald was dense forest. The thickets of the Wealden forest were the home of bears

THE HIGH LANDS OF BRITAIN WHERE THE NEOLITHIC PEOPLE SETTLED.

and wolves; and wolves are deadly foes to cattle-keepers.

The hunters of the Old-Stone Age, who lived from hand to mouth, had no herds to defend from the

attacks of wild beasts ; but the Neolithic villagers had their cattle as well as themselves to protect. In winter weather, and when pressed by hunger, packs of wolves from their forest fastnesses scoured the hills for prey. They would pull down and devour any cattle left unguarded. So the villagers made their homes secure within the stockade, and every night the cattle were driven in and the gate barred up.

The stout fence around the settlement was perhaps needed for protection against human foes also. But probably the people of the New-Stone Age were, on the whole, peaceable folk. Scattered in little tribes over the down-lands, they probably had nothing much to fight about. It was not until later times, when the tribes multiplied and the best lands and hunting-grounds were occupied, and when invaders had begun to come in from over the sea, that fighting ensued, and warfare became a custom.

Then it was that the people made for themselves hill-fortresses to which they could retire in times of war, defended by earthworks into which the cattle could be driven for safety.

. . . . . .

Let us imagine that you and I are boys living in an upland village in Neolithic times. It is early morning in autumn, and when we awake, lying in the hut, it is still dark. We hear the dogs barking, and know that it is time to be up.

We creep out of the hut on hands and knees, for the entrance is low and is blocked by a big stone. Outside we find our dog, a thick-set, rough-haired cur with a wolfish face. He is waiting for us, and he trots along beside us to the cattle-pen.

Two or three men are there before us. They have taken down the bars that close the pen, and the cows are coming out. At the gate three or four more men and boys are waiting ; but the gate is not yet open, and we too have to wait. The cattle crowd up close to the gate. They face round and lower their horns as the dogs come near them.

At last the man who has charge of the gate takes down the bars. The cattle plod out. They are lean, shaggy little beasts, wild-eyed, and not at all like the sleek animals that we see in English meadows to-day. But they will be shaggier and leaner yet as the winter comes on, and we shall find it hard to get pasture for them when the hillside grass is nothing but dry tufts among the snow. Before the spring comes again, bringing fresh green herbage, many of them will have to be killed ; because there will be no fodder for them, and we shall need them as meat for ourselves.

A DOG WITH A WOLFISH FACE.

But as yet there is food for them on the hillsides, and we drive them along, keeping an eye on our own as they roam away. We tend them, hour by hour, lest they should stray beyond the feeding-places into bosky stretches below. For that is dangerous ground.

At midday we munch our meal, strips of dried meat or perhaps dark-coloured cheese and some pieces of hard, coarse bread, and seek about for nuts, whortleberries, and blackberries. We look for fallen acorns under the outlying oaks, gather up as many as we can find, and put them into our wallets to take home.

We set up a stick, and practise throwing stones at it. Two or three of the boys have slings made of deer-hide, and they sling stones, using a leather wallet for a mark. Others, who have bows, practise shooting at the mark with blunt arrows. One of the men lends us his bow, and stands by to correct our action and teach us how to improve our aim.

But all the time some must be watching the cows. One boy, sitting on a jutting-out rock from which he can keep a look-out, has been whittling away with his flint-knife at a bit of elder-tree stem, and has scooped out the pith to make a whistle.

THE COWHERD'S SIGNAL.

Presently we hear a wild yelping. The dogs have turned a hare out of its form among the grass and are chasing it. It doubles across towards us. One of the men runs and takes a long shot at it. He hits ; but before he can rush forward to secure the hare, the half-wild dogs have got it and have torn it in pieces.

Towards sunset the cowherds away to the left of us begin to sound their horns. One of the old men with us sounds his in reply. We round up the cattle and drive them back to the village, and the women come out to milk the cows.

Our day's work is done, and we are ready for our supper.

CHAPTER XVIII

LIFE IN THE NEW-STONE AGE: FOOD

THE food on which people live is a sort of rough guide to their state of civilization. The Cave-men of the Aurignacian and Solutrean times, who hunted the herds of bison and wild horses on the plains, and the Magdalenian hunters, who followed the reindeer, lived, perhaps entirely, on meat. Afterwards, in the dull, damp climate of Azilian times, when big game was scarce, the people were forced to use for food things that the Cave-men would have despised—small animals and coarse fish, whelks and cockles and limpets.

Then, as we have read, when the climate gradually became settled, wild game again became plentiful, and there were red deer and roe deer in the hill forests, wild cattle and wild pigs. In Neolithic times men were still hunters, and they had need to follow the chase for their daily food. Many generations passed before the chief occupation of the men of a tribe was anything but hunting.

Nowadays no one goes out hunting except for sport; and even when "sport" means killing game, the things killed are of little account as food. Between the far-off times, when all hunted from necessity, and the later times, when some only hunted for pleasure, there were the ages when men learned to support themselves by

keeping flocks and herds. This pastoral stage, as it is called, was beginning at the opening of the Neolithic Period.

From very early times men have used for food wild fruits, nuts, seeds, and edible roots. The River-Drift men and their predecessors no doubt subsisted largely on these things.

During the long periods when intense cold had settled on these regions no vegetable foods were to be had. The Magdalenian hunters, for instance, like the Eskimo of to-day, probably had no wild fruits, or at most a few kinds of sparse berries, such as cranberries. People who live in an Arctic climate can subsist entirely on meat and blubber.

But in Neolithic times, under genial skies, there were wild fruits of bush and tree—wild apples and the berries of the mountain ash and the service tree, hips and haws, blackberries, whortleberries, and wild raspberries ; edible roots, such as the wild carrot and parsnip, and the pig-nut ; there were hazel nuts, beech nuts, and acorns. We who have lived for so many generations on cultivated grains and food-stuffs that are to be bought in shops, have lost sight of many of the eatable things that grow wild in the woods and thickets. Our ancestors in Neolithic times knew all of these ; and we can imagine them gathering the wild crops in their rude wicker baskets, and using them to eke out their scanty supplies of food and give a relish to their meals.

It is not known at what period the growing of corn was first practised in western Europe. Some archæologists have thought it possible that there was a beginning of some sort of agriculture even in Azilian

times ; but most think that it was not until towards the end of the Neolithic Period that corn was brought into our country.

Grain, both wheat and barley, had been known in the lands to the east of the Mediterranean Sea from a very early period ; and we may suppose that it was from those countries that the secret of its cultivation was carried across Europe. There is no wild corn in western Europe, and the corn which was grown in these regions could only have come from the south. It was probably passed from tribe to tribe by barter.

At first, perhaps, only very small patches of ground were cultivated, and thinly hoed and badly weeded, and nothing was done to improve the ground after successive crops had been raised. Birds and deer and other wild creatures no doubt spoiled many of the early attempts of the first cultivators. You may remember that Robinson Crusoe found it very hard at first to protect his crops from the fowls of the air and other unwelcome visitors.

Probably in the beginning, and for a long time afterwards, the tilling of the soil and the growing of corn was an occupation despised by the men of the tribes, who would rather handle a bow or a hunting spear than a hoe. But the women, who had to stay by the home and provide food for the children, were ready to add to the household supplies by any means. Among primitive people it is generally the women who do the digging or hoeing and the gathering of the crops, while the men go hunting.

In many places on downs and uplands round the sites of Neolithic dwellings, archæologists nowadays find traces of regular patches or plots which it is

supposed were cultivated ground. It is thought that these may not have been laid out until a later period, but at present we cannot be sure.

However, we must remember that agriculture of a simple kind was already practised on the continent of Europe, and some knowledge of it may have reached those parts of our country lying nearest to the south-east.

The meals of the Neolithic hut-dwellers were different from those of the old Cave-men. They were family meals rather than general feedings. There was better cooking, because earthenware vessels made such an improvement possible.

The women who cooked the meat for the ancient Solutrean hunters in their camps and rock shelters roasted strips or chunks of meat on spits over the fire ; or else they boiled it, by making a hole in the ground, lining it with the skin of the freshly-killed animal, and then filling it with water into which stones were flung red-hot from the fire. This method of " stone-boiling " lasted on into Neolithic times ; but when the art of making pots was known cleaner and quicker methods were possible.

The housewives of the New-Stone Age had more varied food to set before their families. They had milk and curds, and wild fruits and nuts and roots to vary the diet of red deer, or wild boar, which the men brought home. In winter, when game was scarce, some of the home-cattle were killed for food.

The women may have brewed some kind of drink from herbs or from the honey of the wild bees. Many things are possible when people have cooking vessels which will bear the fire.

It was perhaps not until the later part of the Neolithic Period that any sort of bread was made.

Bread is so good and so plentiful with us to-day that we can hardly imagine how scarce it was in prehistoric times, and how poor in quality. In the Great War most of us learned what it means to have a shortage of bread, and bad bread at that ; but the worst of our war-time bread was better by far than that which the Neolithic people ate.

Their crops were small, and the grain poor in size and quality. There was much work to be done with rough tools before the crops could be raised and harvested, and the corn ground into meal. Some of us, who only know of bread as we see it on the table or in the bakers' shops, hardly give a thought to all that has gone to the making of a loaf.

. . . . . .

Let us imagine a woman of the Neolithic times setting about the task of making bread.

We are looking at a little beehive hut, the entrance to which is a hole on the ground-level. A big stone, which we suppose is meant to serve as a door, has been moved aside. We guess that there is some one in the hut.

COMING OUT OF THE STORE-HUT.

Presently a basket appears in the entrance, having been pushed out from within. This is followed by a woman, who creeps out head-foremost into the open. She shoves the stone back to block the entrance, picks up her basket, and carries it off.

Her basket is filled with ears of corn which she has taken from her store. The little hut is not a dwelling, but a store-hut. The ears appear to be wheat; but they are small and dull-coloured, not like the fine, rich yellow ears that we see in a harvest-field to-day.

Outside the living-hut she has laid a cowskin on the ground, and she puts the basket down on this. Then squatting beside it, she takes a few ears of corn from the basket and rubs them between her hands. She blows the husk off and tosses the grain into the air to fall on the skin, so that the rest of the husk is separated. When she has rubbed out all the ears, there lies before her a heap of grain in the middle of the cowskin and a lot of scattered husks.

MILLING CORN.

Carefully she sweeps up the wheat into a tidy pile with her hands, puffing away bits of husk that remain. Then she gathers up the husk, a double handful at a time, and puts it into the basket, for what use we cannot tell.

Then she takes her milling-stone, which is lying near, and lays it beside the heap of corn; and going down on her knees in front of it, she takes a few handfuls of the corn and spreads them on the stone. Taking the rubbing stone in both hands, she crushes the grain, and rubs it up and down till it is broken and ground into a coarse meal. As she continues her work, the meal overflows and falls over the edge of the flat stone

on to the skin, forming a heap on each side. From time to time she gathers up a few handfuls of the meal and puts it into a jar which she has set beside her on the skin. When she has finished she moves the milling-stone away, and scoops up the precious meal, even to the last remains. She has ground all her corn, but the jar is not yet filled up.

The season is the early spring. It is a long time since the harvest was gathered, and her store is low. She brings another jar, and pours out from it a quantity of coarser, darker meal. If we could ask her, she would tell us that this is not wheat-meal, but acorns that have been first soaked, to make them less bitter, then dried and pounded up. With this stuff—only fit, we should say, for pigs—she will eke out her supply of meal.

She pours out from the meal jar a quantity of meal, and mixes it with the ground-up acorns. Then she pours out some water upon the heap, stirs and mixes it with her hands, and kneads it into a paste. It looks dark and not very nice.

She draws from her girdle a wooden knife and scrapes the cowskin where the paste has been mixed, till every scrap is gathered up and added to the lump. She does not waste one morsel. Then with her wooden knife she divides the paste into four pieces, and pats each into the shape of a round flat cake. After this she mixes another lot as before, and makes four more flat cakes.

Near-by a fire is burning on a hearth of stones. She takes a stick, which, smooth and charred, looks like a long-used tool, and sweeps back the hot ashes from a broad flat stone at the front. On this she lays her cakes.

Now she has gone into the hut, and we can come close to the fire for a moment, and see her cakes getting nice and brown on the side next the hot ashes. Presently she comes back, and turns the cakes to prevent them burning. She leaves them again for a little while, and when she comes out again there are her little flat loaves nicely baked. They look rather heavy and not very appetizing, for they have not risen. She picks them up and takes them into the hut.

What sort of bread do you think this would be if we could taste it? Tough and dry and rather gritty, hard to the teeth and bitter to the taste. We should not like it very much. But her husband and her children would think it very good. We may be sure that not a crumb of it was wasted.

Sometimes when the bones of men and women of prehistoric times are found in the old burial-places, it is seen that their teeth have been worn right down to the stump; and it is supposed that this was owing to their having eaten, all their lives, this bread, hard itself and containing particles of sand from the milling-stones.

Perhaps the mothers of families in Neolithic times made porridge as well as bread. We do not know. A little meal in a lot of water will make a bowlful of thin porridge; and when meal was scarce, as no doubt it often was, a careful housewife would perhaps think it more economical to provide stirabout for supper than to use up her meal in making bread-cakes.

CHAPTER XIX

LIFE IN THE NEW-STONE AGE : CRAFTS

THE neatly made bone needles that have been found among the relics of the Magdalenian cave-dwellers tell us that in those days people made their clothes carefully. For protection against the cold of that period, they probably wore fitting suits made of dressed reindeer skin, something like the useful garments of the Eskimo of to-day. Such clothing would be warmer than the tag-rag of hairy skins which the River-Drift men wore hung about their bodies.

In Neolithic times it is likely that suits of dressed red deer skin were worn. Bone needles, like those of the Magdalenian Period, have been found among remains of the period, pierced with eyes which would take a finely shredded sinew for thread.

We do not know the forms or fashions of the garments of the Neolithic people ; but as men and women alike led an active, outdoor life, we may suppose that they did not hamper themselves with loose, flapping clothes. We may perhaps picture them as wearing a principal garment of the kind called a smock or sark ; a kind of shirt without sleeves, probably belted in at the waist and reaching to the knees. The girdle would be useful to hang things to, such as an axe or a wallet.

Men while out hunting would probably bind

HERDSMEN OF THE NEW-STONE PERIOD.
Driving out the cattle to pasture on the hillside.

thongs of leather about their legs and feet as a protection against thorns, or against frost-bite in winter ; but it is likely that the women and children, and most people generally, went about barefoot.

The people liked ornaments, such as necklaces made of animals' teeth or claws or of little shells, or bone beads, which were made with great labour and care by sawing the slender bones of animals into little disks. Sometimes a single tooth or such-like object was worn hung round the neck, and in the late part of the period pieces of amber or jet were used in this way. Perhaps they were amulets or charms.

It seems likely that at some period towards the close of the New-Stone Age the people learned the art of weaving cloth.

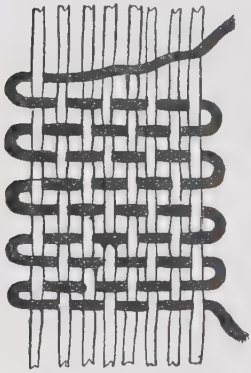
String of some kind is made by primitive people all the world over. It is made from fibres frayed out from the inner bark of certain trees, and twisted into threads by rubbing two strands together with the palm of the hand against the bare thigh. String so twisted is strong enough to be made even into nets and string-baskets, and from these it is not a long step to the making of a coarse kind of cloth.

To weave spun thread, or yarn as it is called, into a piece of cloth broad enough and strong enough to be of use for clothing, a loom is necessary. Perhaps the weavers in Neolithic times had learned about the loom and how to make and use it, from the people to the south and east, where the art of weaving appears to have been known from very early times.

If we take a piece of cloth, the coarser the better, we shall see that it is made of two sets of threads, one set crossing the other at right angles. The one set is

upright, as we may say, and the other woven across, in and out through the upright ones, in front of them and behind. The upright threads are called the warp, and the cross threads the woof.

Nowadays all the cloth that we commonly see is woven by machinery. But although these modern machine-looms are very complicated and wonderful, the main principle on which they work is the simple one of passing the woof through the warp; only when the shuttle is operated by machinery, it moves very fast, and so the work is done at great speed. But the simplest sort of weaving can be done on a rough home-made loom, as many of us know.

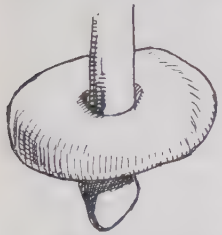


WARP AND WOOF.

The beginning of all cloth is the yarn. Yarn may be made out of any fluffy or soft hairy stuff, provided that the fibres or hairs of which it is composed are fine and fairly long and strong. Sheep's wool does well; and some handfuls of it may often be gathered from the hedges around fields where sheep are feeding.

To turn wool into yarn, a number of hairs must be gathered up between the thumb and forefinger, and twisted into the beginning of a thread. The tip of the thread, so made, is tied to a spindle with a spinner or disk-shaped weight (called a whorl) attached, and then the spindle is spun between finger and thumb and let fall to the ground. This action will continue the drawing out of the thread and give the thread the

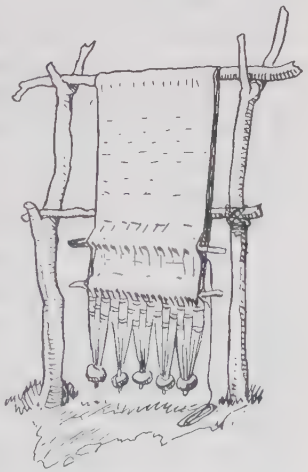
necessary twist. The length of thread that has been spun is then wound on to the spindle, and the action continued as long as there is any wool left in the bunch.



A SPINDLE WHORL.

A beginner's first attempt would probably result in a few short lengths of unequal thickness; but practice would improve both the length and the evenness of the yarn. An old cotton reel with a fine penholder stuck through it would make a spindle for trial. The spindle-whorls of the Neolithic weavers were disks of baked clay with a hole in the centre. These have been found among relics of the New-Stone Period.

A quantity of yarn having been spun and wound on the stick, the next operation is at the loom. The simplest form of loom consists of two uprights held together by a crosspiece at the top. The crosspiece forms the support to which the warp threads are fastened. To each of these, at the lower end, a weight is attached heavy enough to keep them taut.



A SIMPLE LOOM.

The shuttle is a little appliance like a blade, made of wood or bone, used to carry the woof in and out through the warp, to and fro, from side to side.

When a number of turns of the shuttle have been made from left to right and back again, the woof threads are combed down to make the fabric close and firm. For this a forked twig may have been used at first ; but a toothed comb is better, and in later times we find that combs made of wood or bone, with five or six teeth and long handles, were used for this purpose.

Various improvements in the loom were made from time to time, such as a movable crosspiece below the upper beam, to separate the alternate threads of the warp and make it easier to throw the shuttle from side to side, and adjust the positions so that the web could be woven into a pattern. But these improvements were worked out very slowly in the course of generations, and may not have been known to Neolithic women in our country.

It used to be supposed that there was no pottery in western Europe before Neolithic times, but nowadays archæologists are not so sure. But if any pots were made by the people of the Old-Stone Age, it is likely that they were poor things made of unmixed clay and perhaps only sun-dried ; so that when lying a long time in damp soil they would crumble again into earth. Very few remains have been found in Britain which can be supposed to be earlier than the Neolithic Period ; but some broken fragments found near Hastings are believed to belong to Azilian times. These had apparently been fired ; but it may be that they were only bits that had broken in use and were left in the hearth fire.

During the New-Stone Age great improvements were made in the potter's art ; and towards the end of

that period very good examples were turned out. It is likely that better ways of preparing the clay and firing the pots had become known through intercourse with tribes across the Channel or through the incoming of people who knew these things. The potter's art was probably a very ancient craft in the south-east of Europe.

Neolithic pottery was made by hand, without the use of the potter's wheel, which was an invention of later times. It was made of clay mixed with sand or pounded stone and thoroughly baked in the fire. It was sometimes decorated in simple patterns, as we may see in any museum collection, the ornament being applied while the clay was soft, by means of a bone point, a piece of twisted cord, or the potter's finger. Most of the specimens that have been found were unearthed from tombs and burial-mounds, where they were placed, thousands of years ago, to hold the offerings of food and drink that were placed beside the grave. At a later period large wide vases—or urns, as they are called—were made to contain the ashes of the dead, after the body had been burned in the funeral fire.

To realize how good was the workmanship of the Neolithic potters, who were probably always women, it is worth while to try to make with our own hands a little cup or bowl with no other outfit than that which a craftswoman of the New-Stone Age possessed.

First we should obtain some good clean clay, in a workable condition, neither too dry nor too wet, but in a state when it can be readily moulded without sticking to the fingers. It should be well mixed with some sand or pounded stone, and kneaded up like

dough. The paste should be moist enough to be workable, and stiff enough to keep shape when moulded. Dealers who sell materials for arts and crafts supply clay ready prepared ; but it is more amusing, as well as more enterprising, to mix one's own.

Potters among primitive people use no tools except a blade tool made of wood or bone and a small smooth stone. They set a lump of clay on a little mat or platter of wood, or on a piece of slate or some such stone, to make a movable base. Then with the fingers of the right hand they mould and shape up the cup, raising the sides against the tool, and with the left hand turning the base about, to keep the shape even. The stone, being wetted in water now and then, is used to smooth the surface, outside and inside.

Skilful workers make pots with shaped sides, rims and necks ; but a beginner would find a plain little bowl quite difficult enough to produce.

The cup when finished would be set aside in the shade to harden off for a day or so ; and before it had become too dry the ornament would be put on.

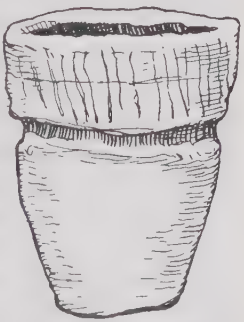
Then a number of pots would be collected together and placed on the ground, and round them a quantity of dried grass and light sticks piled up to make the fire. The fire would be kept burning till the pots were red-hot all through, and then left to die down gradually. When all was cool, the pots would be taken out.

If you visit any good public museum, you will see specimens of Neolithic pottery of different shapes and periods. Some of the oldest have probably been found in the barrows or burial-places of the earlier period, when the people laid their dead in tombs or low

chambers made by piling slabs of stone on end and heaping earth over them. Vessels containing food and drink were placed at the entrance, perhaps in the belief that the spirits of the dead would need refreshment in the world beyond the grave, and as an offering to appease them.

EARLY POTTERY MADE BY HAND.

Later in the Neolithic times people of a different race brought in the custom of the funeral pyre. These people were the makers of the round barrows that are common on the Yorkshire wolds and moors and also on the downs in Wiltshire and Dorset. The ashes of the dead were gathered up and placed in an urn, over which a cairn of stones was built, the whole being covered with earth. Beside the urn some of the dead man's own possessions were placed, as well as vessels containing food and drink. It is because these relics were so carefully covered up that they have been preserved for so long a time.

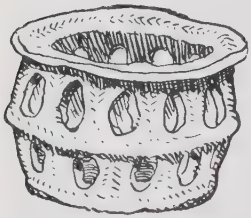


AN URN FOR THE ASHES OF THE DEAD. (12 inches or more in height.)

It may some day fall to our lot to watch the opening of a burial-mound of these far-off days, and see for ourselves how the ancient relics were arranged by reverent hands so long ago.

Sometimes beside the urn a little vessel of peculiar shape has been discovered. These, in museums, are

often labelled as "incense cups," because as a rule they are perforated with holes, as if to allow for a draught of air to keep such a substance as incense alight. But some archæologists believe that their use was to contain red-hot embers of charcoal from the home-hearth or the temple to light the funeral pyre. These "incense cups," or fire-carriers, it is said, have been found only in England.



AN "INCENSE CUP."
(About the size of a breakfast cup.)

The drinking-cup in the picture is of a pattern found in many of the round barrows in Eastern Scotland, East Yorkshire, the Peak Country, and other parts to which new-comers might have penetrated from the sea-coast. These cups are called beakers, and their shape is distinctive. Similar ones have been discovered at various sites in western and central Europe; and it is supposed that these beakers were brought into Britain by immigrants or invaders coming over the North Sea. To these invaders the name of the "Beaker people" has been given.

A BEAKER.

It seems odd to name a people after one of their everyday utensils; but the fact of such a name being chosen will help us to realize how little is known of these people. The name by which they called themselves and every word of the language they spoke have been lost for ages. But we may realize, too, how much archæologists value true facts which will help to throw light on the past.

By the careful noting down of all the sites in Britain at which these mugs have been found, and marking them out on a map, it has become possible to trace out the connection of peoples, and establish one fact among the uncertainties of unwritten history.

We who live in the twentieth century A.D., with all its machinery, factories, and shops, are so used to having everything ready-made that we are apt to undervalue hand-work. We do not realize how much power of invention and skill of handicraft had to be expended, in days before machinery, to produce such a thing as a pocket-knife, a brush, or a pair of gloves.

We are apt to think too little of the resourcefulness and cleverness of the Stone-Age people. They could do a great many things that we cannot do, as we should find to our cost if ever we were cast away on a desert island, and had to fend for ourselves and live off the naked, untilled ground.

Sometimes when questions arise as to whether it is possible that man in prehistoric times could do something or other, such as hafting an axe, making a bow, hollowing a canoe out of a tree trunk, or sinking a shaft in a flint-mine, it is better on the whole to conclude that he could, rather than that he could not. He may have been rather a rough-looking fellow at first sight; but the chances are that he was a great deal cleverer with his hands than we are, or most of the people whom we know.

CHAPTER XX

LIFE IN THE NEW-STONE AGE : BARTER

In various ways life was easier for the people of Neolithic times than it had been for their forerunners. Their huts were more comfortable than the caves of the cave-dwellers, and their food much more varied, besides being more sure. They had better weapons, and so they could kill game more easily and successfully. A hunter armed with bow and arrows stands a better chance of bringing down his quarry than one who can only hurl a spear ; just as a man who could hurl a spear stood a better chance than he who could only kill big game by waiting on traps and pitfalls, in the old savage way.

Besides his better hunting gear, Neolithic man as a cattle-keeper had resources that the hunters of the Old-Stone Age never dreamed of.

But with all this, the people of Neolithic times had difficulties from which their forerunners were free. No one at any time can have all the halfpence and none of the kicks. Better fortune always means bigger risks. Only the people who have nothing and want nothing are free from the cares that possessions bring.

The people of the New-Stone Age, settled in their villages, with their cattle and their household stores of one kind or another, were owners of property.

When people are owners of property, there are usually other people, less well off, who would like to relieve them of the burden by taking some of their property from them.

We may be sure that no one ever wanted to raid the tumbledown shelters of the River-Drift men. In those days, when only a few scattered packs of homeless folk wandered over wide regions, there were no raiders ; and if there had been, there was nothing for them to get.

There was probably very little robbing or raiding in the times of the Cave-men. They had no one except the cave-bears to dispute with about the possession of the home, and their household goods did not amount to much. Now and then there may have been quarrels over the right to the hunting-grounds ; but such an affray was probably little more than a scuffle in the open between little parties, when the weaker would soon have to give way.

But a Neolithic village was always liable to attack from the inhabitants of another village, where perhaps the people had lost many cattle from wolves, or had had to kill their cows in a time of famine. Lean and hungry men would be tempted to go out and raid the cattle of a village over the hills. It is not much more than three hundred years ago since the Scottish moss-troopers used to ride across the Border to drive off the cattle from the farms on the English side ; and the men of Northumberland and Cumberland used to set forth and raid the Lowland farms in return. This took place in our own country, where there was a settled government and established laws.

In the Neolithic Period there was no government

and no laws. The people could only defend their rights as best they could. That is why we see all over the upland country, wherever the traces of Neolithic settlements are found, the remains of the ancient hill-forts to which the inhabitants could retire when a raid took place.

The stockade round a village was meant as a defence against wolves. It could not be made tall enough or strong enough to keep out a band of active and determined men. So if a robber party, with their fighting gear, was spied coming over the hills, the alarm would be given by some swift runner. Then the women would hastily gather up their possessions, and, helped by the boys and old men, would drive off the cattle and goats, while the fighting men of the village turned out to fight the raiders in the open. The hill-fort was usually a strong position on high ground, with a ring of earthworks enclosing space for the herds. Here, if necessary, the villagers could take refuge for a few days, waiting the outcome of the battle. If their men won the fight, all would return to the village ; and perhaps the heads of some of the raiders would be stuck up on poles beside the gate. But if the villagers were overcome in the first onset, they would fall back on the fort, and there, before the earthworks, the fight would be fought out.

Such fights were terrible enough to the people concerned, but they were not war. Only small numbers could take part, and the struggle at most could only last for a few days. The defenders would go home again. Those fallen in the fight were buried with the funeral honours of the tribe. The wounded were treated with remedies of herbs, of which the women

or the wise men of the village held the secret. Daily life went on as before, except that while the memory of the attack was fresh, the cowherds on the hillsides kept a sharp look-out upon the trackways by which danger might come.

Of the hill-forts in our country, some, like Cissbury in Sussex or Maumbury Rings or Maiden Castle in Dorset, are believed to belong in the main to a period later than Neolithic times. They are vast systems of earthworks, carefully planned and constructed at the cost of enormous labour. But it is possible, even so, that the beginnings of these great strongholds were on a smaller scale, and were made by herdsmen of the Neolithic Period, who had to be prepared at any time to save their flocks and herds from the swooping attack of a raiding foe.

If we look back to the Old-Stone Age we see the people thinly scattered over the country, a few hunting bands roaming about at their own will, following the movements of the animals they hunted. They knew no neighbours, for one pack shunned another, and none had need of another for the things of daily life.

But in Neolithic times the people were more numerous and the needs of life were greater. In a hunting tribe all the men are hunters and the women are cooks and camp-drudges. In a village community there are varied tasks and occupations. The bolder and hardier among the men of the Neolithic villages chose the occupation of the hunter, and disdained humbler tasks. The quieter sort preferred the peaceable work of the herdsman, minded their cattle, and planned the increase of their herds. Some, inheriting the ancient skill, became workers in flint, makers of

flint knives, axe-heads, and arrow-heads. The demand for their wares was so great that it paid such men to give themselves up entirely to their craft, and barter their well-chipped stones for food and clothing and firewood. Some men were miners, to provide the flint-knappers with their raw material. These men, on account of the difficult and dangerous work that they carried on underground, perhaps demanded a high price for the good stones that they picked out in the galleries of the flint-mines and sent up in heavy basket-loads, that were hauled up out of the shafts with stout hide ropes.

A WOMAN HOEING.

The women were not only housewives and cooks, but also tailors. It was their task also to dry and cure the skins of deer and domestic cattle out of which clothes for everyday were made. Skins were scraped clean, stretched on a frame of sticks, and dried in the sun. If the hair was to be taken off, they were soaked in water, and then scraped again with flint scrapers until all the hair was removed. Then the hide was thoroughly greased and pulled about, bunched up and rubbed and squeezed between the hands till it was soft and pliable. A great deal of work was necessary to make a hide thoroughly supple, and a deerskin well cured and dressed was an article worth a good deal for barter.

The women were the weavers and the potters, and when agriculture was first practised towards the end

of the Neolithic Period, they were the tillers of the soil.

They looked after the gathering of the crops; not only the scanty harvest of their little cultivated patches, but also the wild fruits of the woods and brambly undergrowth. They gathered herbs, from which they made medicines. Some women no doubt knew more about plants and herbs than others, just as some were better potters or tailors. But, as a rule, in every village there were two or three men who claimed a greater skill and power in medicine than the women. They were workers in magic, and the chief of them, usually the oldest, was a person of great authority in the village. They claimed to be able not only to cure sickness, but to foretell events and decide what days would be lucky for various enterprises. They made charms and amulets, and people used to buy these as a protection against evil spirits. They were the referees in matters of ceremony and custom, and if you had lived in a Neolithic village, you would have found it a good thing to be in favour with the medicine man or wizard; but you would not be likely to keep in favour unless you were ready at times to offer him a suitable present as fee.

A MEDICINE MAN.

There was no money in those times, and all transactions were done by bartering of goods. The flint-worker bartered arrow-heads in exchange for meat, or dressed deerskin, or perhaps a load of firewood.

A man might bring some good sound pots which his wife had made, to exchange for a young heifer or a bag of seed-corn. Another man, who had spent many hours beside the fire on winter evenings cutting out bone beads and polishing them for a necklace, would offer perhaps to barter the finished necklace for a clever hunting dog.

Barter was carried on not only among the inhabitants of a village, one person with another, but also between village and village.

One tribe lived in a region where good flint was to be found. They made the most of their valuable property, and kept a supply on hand, hauled up from their mines, to use for trade. Above ground, the men of the tribe, skilled craftsmen, carried on the business of flint-knappers, and had a stock of all sorts of implements and weapons. Their factory would be known for miles around ; and parties would come from distant tribes, over the hills, to barter for flints, axes, arrowheads, scrapers, borers, adzes, and hoes.

An English archæologist, spending his holidays at Penmaenmawr in North Wales, discovered an ancient Neolithic axe-head factory on the side of a mountain. The axe-heads were made from a hard stone, greyish-green in colour, quarried from the mountain rock. Apparently this was not what we should call a " finishing shop," for all the stock that was found was chipped out in the rough. Probably purchasers took their axeheads away to be ground and polished at home. Among some rubbish a ground axe was found, worn and broken. This was no doubt left behind by a customer who, having bought a new one, threw away the useless old tool, just as nowadays we leave an old

A POTTER OF THE NEW-STONE PERIOD.

Neolithic woman and her pottery. The pottery is of a character generally regarded as belonging to the end of this period.

tyre at the bicycle shop when we have had a new one fitted.

The inhabitants of a region where wild game abounded would have dressed hides, deers' antlers, and wild boars' tusks to barter. Those dwelling in areas nearer to the source of supply would have a better breed of cattle or finer sorts of grain. Another tribe might have a special sort of hard, gritty sandstone, much desired for making milling- and rubbing-stones.

Salt was an article much desired and eagerly bartered. It was brought over long distances, and perhaps the tribes far away in the west seldom had a chance to get any. Coloured beads and ornaments of rare substances, such as amber or even of gold, and finely woven cloth were brought from southern parts ; and such things as these could only be bartered for much goods of the common kind.

. . . . . .

We may imagine that we are standing outside the stockade of a village of the Neolithic Period. In front of us there is a trodden pathway leading to the gate in the stockade, and above the fence the roofs of the huts appear. They are thatched, and not very tidy, most of them having the ends of ragged poles sticking out at the top.

A party of men approaches, coming along the trackway. Most of them are armed with bows and axes, and some have bundles bound on their shoulders. They halt outside the gate, which is open ; but no one comes to stop them, and they march in.

Now they have entered the village, and we see them standing in a group on an open space among the huts.

They are loosening the bundles from the shoulders of the bearers, and the village people are gathering round. Women are coming out of the huts; children are shouting and dogs barking. Some of the men come along, and soon there is a crowd round the strangers.

The space where they stand is trodden ground, bare and brown, but between the legs of the onlookers we catch a glimpse of something red. It is scarlet cloth, which the strangers have taken out of one of their packs and laid upon the ground. They are opening other bundles, and holding up bright things for the people to see.

THE CHIEF.

Where the crowd of villagers is thickest, stands a tall man better dressed than the others, to whom all seem to pay respect. We suppose that he is the chief of the village. To right and left are the women, some squatting on the ground with their children beside them. People are hurrying from their huts loaded with furs and skins to barter for the strangers' goods.

But the traders are hard to satisfy. They will accept food in exchange for beads or a handful of salt; but for their finer goods they will take only the best-dressed hides and the choicest furs of beaver, marten, or fox. There is a man in the village who makes fine arrow-heads, and the traders will take all he has.

From one of their bundles they have unpacked a

few axes, which the men crowd round to see. These are of a kind which no one in the village has ever seen before—very fine and smooth and sharp-edged, and of a dull yellow colour. One of the traders chops at a log which is lying on the ground, and the chips fly. Every one is astonished.

The leader of the traders tells the chief that these axes are not stone; he calls them by a name which none of the people understand. He asks a high price for these axes.

A young man who is a clever hunter, and has some fine furs to barter, buys one of them. He is delighted with his purchase, and there and then does a dance, brandishing his fine new axe above his head.

THE OLD HUNTER.

At the edge of the crowd, sitting on a stone, is an old man. He has been a great hunter in his time, but he is bowed with age and nearly blind.

The young man dances up to him and shows him the bronze axe. The old grandfather takes it in his hands, peers at it from under his shaggy eyebrows, and passes his thumb along the edge of the blade. By his side hangs his old stone axe, a trusty weapon tried in many a hard encounter. He tosses the new-fangled thing upon the ground, and the young man, greatly offended, picks it up and stalks away.

The old hunter sits bent, with his worn-out weapon laid across his knees. His thoughts are of the past, and old memories are more to him than new fancies. But the life that he has lived is closing, and a new age is about to begin.

INDEX

ACHEULEAN, meaning of, 34, 39.
—— hand-axe, 48, 54–55.
—— period, 40.
Agriculture. *See* CORN.
Altamira, cave, 114.
Amber, 177.
Animals, prehistoric, 31, 42–43.
—— of the River-Drift period, 23, 59, 60.
—— of the Cave period, 78–79, 82 *sqq.*, 95.
—— of the New-Stone period, 152.
Ape-like features in early man, 92.
Arrow-heads, 136–137, 143.
Arts and crafts of the Cave-men, 107 *sqq.*
Aurignaican, meaning of, 35.
—— flints, 49, 97 ; bone tools, 97.
—— period, 35, 40, 95 *sqq.*
Axes of the Old-Stone period. *See* HAND-AXE.
—— of the New-Stone period, 135–136, 142, 176.
Azilian, meaning of, 35, 38.
—— flints and tools, 128.
—— period, 40, 127–128.

BARTER in the New-Stone period, 175 *sqq.*
Beads, 102, 161, 176, 177, 178.
Beaker people, the, 168.
Beakers, 168.
Bear, prehistoric, 60. *See* CAVE-BEAR.

Bison, prehistoric, 60, 95, 114, 116.
—— of Tuc d'Audoubert, 117.
Bone tools of the later Cave-men, 49, 97 *sqq.*
Bow and arrow, 109, 137.
Brandon, flint-mines at, 141.
Bread-making in the New-Stone period, 156 *sqq.*
Brick-earths, 27.

Canoes, 130, 138, 169.
Cattle, taming and keeping of, 146–147, 150–151.
Cave, exploration of a, 118 *sqq.*
Cave-bear, the, 79–80, 82, 95, 117.
Cave-men, 33, 35, 79–80.
—— first, life of, 86 *sqq.*
—— later, life of, 35, 96 *sqq.*, 100 *sqq.*; art and crafts of, 35, 107 *sqq.*
Cave paintings, 35, 113 *sqq.*
Caves, formation of, 85.
—— occupation by the first Cave-men, 79–80, 85 *sqq.*, 144.
Chellean, meaning of, 34, 38.
—— hand-axe, 48.
—— period, 34, 40, 42.
Climate, changes of, 19, 21, 24, 58, 78, 82, 126, 139.
Clothing of the River-Drift men, 64, 67.
—— of the Cave-men, 101, 111.
—— of the New-Stone period, 160–161.
Corn, cultivation of, 153 *sqq.*
Coup-de-poing, 47.
Cro-Magnon people, the, 37, 40, 90 *sqq.*

Dawn period, 40.
—— men of the, 52 *sqq.*
Dead, burial of, in the Cave period, 37, 89.
—— in the New-Stone period, 165, 167.
Dog, taming of, 127.

Drink of the Cave-men, 105.
—— in the New-Stone period, 155.

Elephant, prehistoric, 23, 59, 82, 84.
—— in pitfall, 69 *sqq.*
—— the straight-tusked, 73–74.
Eolithic period, 40 52 *sqq.*
Eoliths, 53 *sqq.*

Fire, origin and use of, 77.
Fishermen, River-Drift, 64 *sqq.*, 67 *sqq.*, 75.
—— Magdalenian, 107.
—— Azilian, 129.
Flint, characteristics of, 44–45.
Flint mines and miners, 140–141, 174.
Flint tools of the River-Drift, 46, 48, 54–55.
—— —— of the first Cave-men, 48, 49.
—— —— of the later Cave-men, 46, 49, 50, 96.
—— —— of the Azilian period, 128, 131–132.
—— —— of the New Stone period, 134 *sqq.*, 174, 176, 178.
—— —— our own attempts at, 49–50.
Food of the River-Drift men, 71, 74–75, 153.
Food supplies, the Cave-men's, 103, 152, 155.
—— in the Azilian period, 127, 129, 152.
—— in the New-Stone period, 152 *sqq.*

Galley Hill man, 37.
Geology, hints about, 16 *sqq.*
Glacial periods, 21, 78, 82.
Gray's Inn Lane stone, the, 54.

Hand-axe, 47–48, 54, 135.
Harpoons, Magdalenian, 108.
—— Azilian, 128.
Hides, curing of, 102, 174.

Hill forts of the New-Stone period, 149, 172–173.
Hippopotamus, prehistoric, 23, 59, 63–64, 84.
Horses, prehistoric, 95–96, 112–113, 123.
Hunters of the River-Drift period, 60, 64 *sqq.*, 68 *sqq.*, 74–75.
—— of the Cave period, 93, 96, 103–104, 107.
—— of the Azilian period, 127, 129.
—— of the New-Stone period, 147, 152, 155, 173.
Hut shelters of the River-Drift men, 70, 84, 144.
Huts, early types of, 129.
—— of the New-Stone period, 144 *sqq.*
Hyenas, prehistoric, 74, 86.

Ice Age, the Great, 19–20, 24.
" Incense cups," 168.

Kitchen-middens, 129.

Lamps of the Cave-men, 115.
—— of the flint miners, 141.
Lion, prehistoric, 60, 106.
—— of Montespan, 117.
Loom, a simple form of, 163.

Magdalenian, meaning of, 35, 39.
—— bone tools, 49, 99, 107.
—— period, 40, 95.
Mammoth, the, 78, 83.
Medicine men, 175.
Men, prehistoric, types of, 32 *sqq.*
Mesolithic (Middle-Stone) period, 133.
Milling (or mealing) stone, 157, 177.
Monsters, prehistoric, 42–43.
Mousterian, meaning of, 34, 38.
—— flints, 48–49.
—— people, 37, 79–80, 85, 88, 93–94.

Mousterian period, 34–35, 40.
Museums, what to look for in, 13, 47, 54, 73, 87, 129, 132, 166.
Musk ox, 84.

Names in Unwritten History, 32, 34, 38–39, 168.
Neanderthal man, 36, 90, 92.
Needles, bone, 49, 110, 122, 160.
Neolithic. *See* New-Stone Period.
New-Stone period, 33, 40, 41, 134 *sqq.*
—— life in the, 149 *sqq.*
—— tools of the, 49, 135 *sqq.*

Old-Stone period, 33–34, 40, 41, 46.

Palæolithic. *See* Old-Stone period.
Pebbles, painted, 128.
Piltdown man, 36, 57, 92.
Pottery, early types of, 137, 164 *sqq.*
—— making of, 165–166.
" Prehistoric peeps," 42.
Pygmy flints, 131–132.

Red Deer, 127, 152.
Reindeer, 83, 126, 127.
Rhinoceros, prehistoric, 23, 59, 84.
—— the Woolly, 78.
River-Drift men, 33, 37, 58 *sqq.*, 62–63, 93.
—— tools of the, 47–48, 68.
—— life of the, 63 *sqq.*, 67 *sqq.*, 87, 93.
Rivers in prehistoric times, 24 *sqq.*
River terraces, formation of, 27 *sqq.*

Sahara, Desert of, 139.
Salt, 177.
Shaft-straightener, 109.

Shell mounds, 129.
Solutrean, meaning of, 35, 39.
—— flints, 49, 97.
—— period, 40, 95–96.
Spear, wooden, of the River-Drift men, 76.
Spinning, 161 *sqq.*
Stone-boiling, 155.
Strepyan, meaning of, 34, 38.
—— hand-axe, 48.
—— period, 34, 40, 42.
String, 66, 161.

Tardenoisean period, 132.
Terraces, river, 28–29.
Thames, river, in ancient days, 21, 25–27.
Tiger, prehistoric, 60.
Tranchet, 130, 134.

Urns, for burial, 167.

Village, a Neolithic, site of, 146.
—— defences of, 172.

Warfare, in prehistoric times, 149, 171 *sqq.*
Weaving, 161 *sqq.*
Wolves, 143, 148–149.

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